SPECIAL SIGGRAPH ISSUE

NewTekNIQUES

May/June 2000
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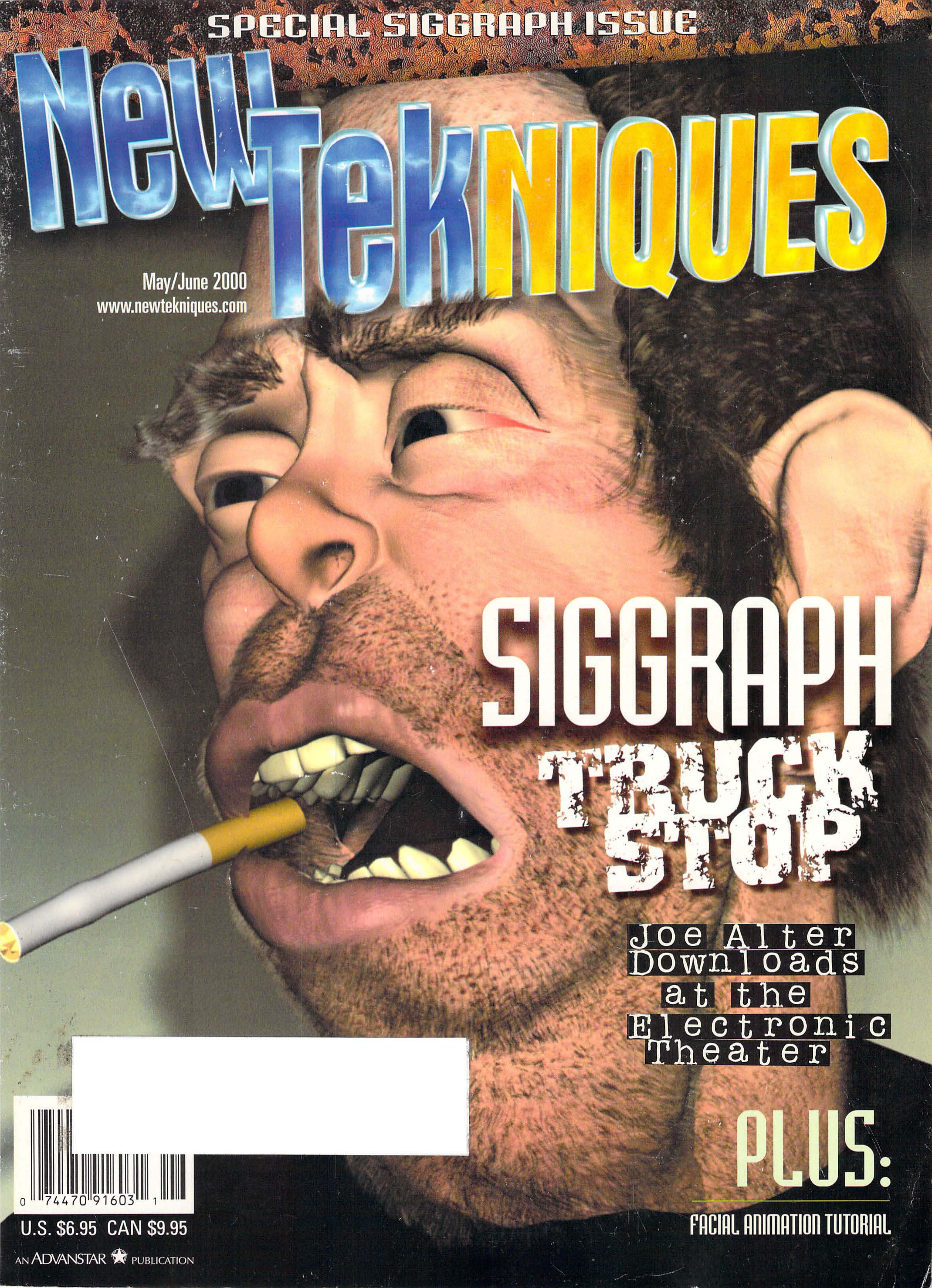

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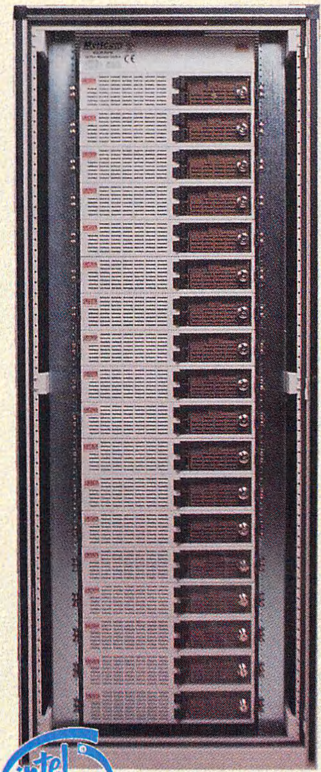

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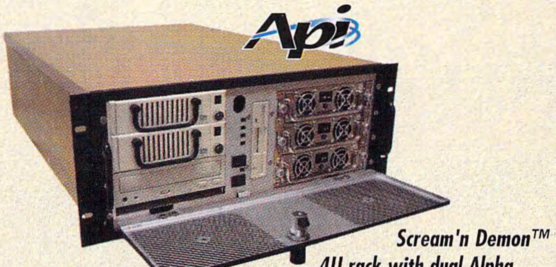

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NewTekNIQUES

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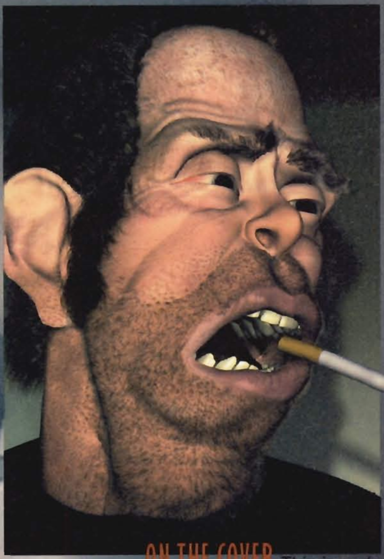

ON THE COVER This issue's cover, "A Hirsute Tony," features one of the garrulous garbage men from Joe Alter's award winning animated short, *Jersey*. Clean-shaven in the film, Tony grows a beard for the cover courtesy of Alter's hair plug-in, "A Shave and a Haircut."

Impressions

A FEW WORDS FROM OUR EDITORS-IN CHIEF

by
Molly Dinkins
& Dick De Jong

Independents Day

No, Toto, NewTek is not in Topeka anymore. Since the start of the millennium, NewTek has been crisscrossing continents to dispatch their message and expand their markets. In a few short weeks, NewTek emissaries have been spotted at NAB is Las Vegas, newMedia in Toronto, Expo Latina in Miami, Telemundo in Mexico City, and SIGGRAPH in New Orleans. Sales rep, Paul Ford has toured Asia, while Abel Garza visits our Pan American neighbors. Meanwhile, Graham Thoms leads a charge from Belfast and Franck Lafage continues the assault on the European mainland. Of course, DStorm already has established a major LightWave community in Japan.

At the same time, artists worldwide are flooding the NewTekniques website with a plethora of digital artistry. The global gallery includes creations from Bali, Brazil, Canada, Denmark, Switzerland, Turkey, and Yugoslavia. We salute this international effort and will continue to report about it in the magazine and online. (Get your animation clips ready for our website's upgrade.)

Let Freedom Ring

Joe Alter, artiste extraordinaire, a David whose *Jersey* slew the corporate Goliaths at Imagina this year, leads a declaration for independents and inaugurates *NewTekniques* series of features on personal projects. In the next issue, Gesine Kratsner's *Mouse Trap* takes center stage. Don't get us wrong, we still love the gazillion dollar, whiz bang, special effects Hollywood blockbusters (well, maybe not all of them); but we think the small independent projects allow the creative heart and soul to flourish. LightWave has an illustrious history of spawning these gems dating back to Dale Myers' *Robo Jr.* and John Davis' *Johnny Quasar.*

Don't worry, *NewTekniques* still will be your source of information about titanic productions that involve LightWave; but our radar also is scanning for the next *Thumbtanic* (Steve Oedekerk's hilarious parody). If you mined or polished one of these diamonds, email us.

But David also took a few blows to the body recently. Studios cut back; and skilled, experienced artists were suddenly shopping for their next job For those folks smacked by the "cruel club of fate," like a piñata at Sammy Sosa's birthday party (see Mojo's column), and for whom his advice comes too late (you already panicked), we want you to know why Mojo said that getting fired "wound up being the best thing that could have ever happened to me." During his hiatus five years ago, he sat in the *Star Trek* Captain's chair, he learned how to drive, he was married in Las Vegas wearing an Elvis outfit, and he landed a job that paid more than the one he lost.

While we wish you such an eventful unemployment, we also endorse Mojo's advice from the last issue: take your time, tools and talent and begin creating your own "Jersey." Strike a blow for independents. Who knows, in a couple of years, we will be writing about you at Imagina in Monaco or your film screening at Electronic Theater. Or maybe, you will be sprinting to the stage of the Shrine Theater, heart pounding, preparing to utter those famous words, "I would like to thank the Academy…"

Progress Report

You may have noticed the magazine's growing girth. In this issue, we added more pages and more tutorials because we have more ads. For our next issue devoted to character animation, we already have lined up too many tutorials to fit into our current capacity. We need to expand the magazine even more; but in the publishing world the formula remains resolute, *more* subscriptions + *more* advertisers = more editorial pages. As Editors, we will strive to fill the magazine to overflowing with useful, practical information. As readers, please support our efforts by renewing your subscription and patronizing our advertisers.

Finally, visit us at www.newtekniques.com. We think that you will discover exciting changes in the near future. Of course, email us at editors@newtekniques.com with your suggestions and comments. NT

NewTekniques

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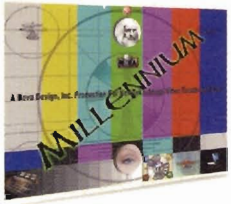
Nova Design's Millennium for the Amiga Video Toaster/Flyer. Extremely cool, wildly powerful, and gives your Toaster and/or Toaster/Flyer amazing new powers to help you make your work look better than ever before with minimal investment! The Millennium package is presented by Newtek and has been produced by Nova Design, Inc. in cooperation with all prominent Toaster/Flyer developers. What's inside Millennium is not merely a single package. It is a collection of software, scripts, effects, fonts, backgrounds, and other content designed to update your Video Toaster and Flyer dramatically. Millennium was designed to be the largest, most comprehensive, upgrade you could put on your system. It's for the Toaster owner as well as the Toaster&Flyer owner. You'll find some old favorites are now part of the Millennium package. Some packages you will be familiar with and some will be brand new to you. Some existing packages have been upgraded significantly for the Millennium release and some have been made Toaster and Flyer friendly as well. Here's a list of what you'll find in the package.



Wipe Studio - You may be familiar with the 'lite' version-but this is the complete package! Use it to create your own wipes and effects for the Toaster and Flyer. **RenderFX** - Upgraded for Millennium, this package allows you to render your FlyerClip sequences down to a new FlyerClip. You can then layer more video, CG, and effects for a far more impressive production. **Flyer Utilities** - Includes utilities for converting Toaster wipes between 3.x and 4.x formats, Undeleting FlyerClips,Timecoding and much more. **ProMix** - Upgraded for Millennium, this package provides audio tools to let you add audio to video, import/export audio formats, add audio to FlyerClips and animations, and more. Fast Frames - Allows you to 'Toasterize' your Video Flyer by pre-recording CG sequences, Framestore montages, and create flying CG effects and more. **Fast Fuel Millennium** - Adds video deck control to the Toaster/Flyer interface for automatic clip recording. **Electric Scene Knife** - Time is money and this can save you literally hours of work. The Knife can take a FlyerClip and automatically find the different scenes within it, mark them, and even offer to cut them into separate FlyerClips for you. **Flyer Backup** - A script based system that can backup your actual FlyerClips to a hard drive or to removable media. **CGPilot** - The famous CG ARexx scripts that automate many time consuming CG tasks **Toaster Wipes and Effects** - There are hundreds of these and most are available for both Toaster 3.x and 4.x so both Toaster and Flyer owners can use them. These include wedding wipes, fire wipes, basic animated wipes, cool soft gradient wipes, and fully rotoscoped matte wipes. **MegFX** - Over 40 Flyer 4.x effects that perform real-time, full dual-stream (dual-clip), split-screen and layering effects directly in Flyer projects with no rendering! **Backgrounds** - Hundreds of full color, professionally drawn, backgrounds for you to use in your CG pages or in ToasterPaint. **Full motion backgrounds** - FlyerClips of animated scenes, fire, and more. You can use these with your Flyer for CG backgrounds or as royalty-free stock footage. There are many other features of Millennium. We've really just touched the surface of all the tools and content that are included in Millennium to make your Toaster and Flyer more productive for you. Millennium also includes hundreds of new ARexx commands for scripting, programmer's manuals for the ProMix and RenderFX tools and more. It includes three CDROMs packed with wipes, effects, fonts, backgrounds, software and more; full printed documentation, a video tape overview of the package and a comprehensive color catalog of other Toaster/Flyer products.

Nova Design's ImageFX is the Amiga's top rated image editing & special effects package. Leading in sales worldwide, Amiga magazines have said ImageFX is '*the king of the hill*' & told their readers that '*You need this program. Period.*' We couldn't have said it better ourselves. ***System Features*** ; **WYSIWYG** - Interactive preview screen shows changes instantly. **File Format Conversion** - Supports reading & writing dozens of file formats from many different platforms. **Image Processing** - Hundreds of tools for enhancing, filtering,or restoring your images. **Region Controls** - Limit processing to regions with definable softedges. **Full Color Painting** - Traditional painting tools are available in full 24-bit color. **Image Rendering** - Advanced rendering & dithering algorithms for generating colormapped images for multimedia applications. **Multiple Level Undo** - Limited only by your available memory. **Virtual Memory** - Use your hard drive to work on images of anysize, including film & print resolutions. **Batch Processing** - Perform effects on animations & sequences of frames using AutoFX & IMP utilities. **Arexx** - Hundreds of Arexx commands allow for sophisticated control scripts. Dozens of sample stand alone scripts included. **Configurability** - Define hot keys to perform frequent tasks, or change the menus to suit your work environment **Modular Design** - Open-ended architecture allows for future expansion by Nova Design or third party companies. Development information is available freely. **Morphing** - CineMorph, a full motion, cinematic quality morphing package is included at no extra charge. **Serious Documentation** - In addition to the on-line help system, the manual contains over 400 pages of tutorials & reference. **Continuing Support** - Nova Design continues to provide support & upgrades for ImageFX. ***Hardware Compatibility*** , **Newtek Video Toaster** - Supports the Video Toaster for frame grabbing, rendering, & previewing & painting -- directly on the Toaster's composite output! **Graphic Boards** - Supports all Amiga modes, Video Toaster, Retina, Picasso, IV-24, OpalVision, DMI Resolver, Harlequin, Firecracker, DCTV, HAM-E, all EGS-compatible hardware such as the Spectrum, Talon & Rainbow III, & supports the new Cybergraphics retargetable graphics software **Scanners** - Sharp JX100 & all current Epson & Hewlett Packard scanner models via SCSI connections. Parallel option also available on Epson scanners. **Framegrabbers** - IV-24, VLAB & VLAB YC framegrabber, Progressive Peripherals Framegrabber & Framegrabber 256. **Printers** - Any Workbench Preferences compatible printer, PostScript printers, & direct full color support for the Fargo Primera & PrimeraPro color printers. ***Painting Features*** ; Real-time painting tools that emulate traditional media. Real-time airbrush with adjustable size & dispersal pattern. Many drawing modes. Drawing styles to allow rub through to other images or alpha channels, create mandalas, realistic brush stroke fading, & more. Friskets, masks, & textures using regions & the alpha channel. Soft edge modes & anti-aliasing. Many gradient fill patterns. Eight customizable color palettes to choose from. Image Processing/Special Effects - RGB, HSV, CMY color balancing - Composites & mattes - 2D image rotation - 3D perspective rotation - Image scaling & cropping - Custom color transforms - Halftoning effects - Custom convolution matrix - Sharpen, Blur, Unsharp Mask - Motion blur - Three edge detection algorithms - Dynamic range & histogram equalization - Anti-aliasing - Median, minimum & maximum filters - NTSC & PAL video filters & MUCH MUCH MORE! **File Formats Supported** - **Amiga** - ILBM, ANIM, ANIM7, DataTypes, DCTV, AXX, ToasterFrameStore, HAM-E, IMG8, Impulse, Workbench Icon, DPS PAR, Rendition, Sculpt, YUVN. **Macintosh** - Photoshop PSD, PICT (including vector & JPEG variations), TIFF, Targa, MacPaint **MS-DOS** - Photoshop PSD, BMP, DPIIE, FLI animation, PIC, GRASP/GL animation, DLanimation, Windows Icons, PCX **Silicon Graphics** - Alias, SGI RGB, Wavefront, Softimage **Micellaneous** - PNG, Abekas A60, FITS, PDS/Vicar, JPEG, C64 Koala, MPEG & More! **Requirements** Any model Amiga w/2MB memory, a hard drive, CDROM (floppies optional) & Workbench 2.1 or later. For best results, an accelerator, 8MB of memory, & a large hard drive are recommended.

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Visions

FROM THE PAST, FOR THE PRESENT, AND INTO THE FUTURE

by
Brad Peebler,
LightWave Product
Manager

LOYALTY

Thank God for the Amiga. NewTek's Amiga lineage taught us an important lesson. Computer platforms are more than the plastic and chips that run them, the stuffy suits who manage them, the sales people who peddle them, or the engineers who design them. Computer platforms live and breathe, and it's pretty damned hard to kill 'em. Devotees sustain its spirit even when the corpus withers. As the old adage goes, "You can have my Amiga when you pry it from my cold dead hands!" NewTek understands the value of loyalty.

While the Amiga struggles to rise from the ashes, one computing Phoenix flies high above the flames; its body covered in fiery colors - from tangerine to lime. And the turbine pumping its wings is the powerful G4.

Only five years ago, Apple's future appeared truly troubled with its plummeting market share and its customers dazed and confused by the labyrinth of products. From Cupertino, you could hear sucking sounds as software applications fled to Windows. Despite the obvious risk, one company fought against the prevailing winds. As Apple began to burn, LightWave 3D started its rapid journey to the Macintosh platform.

Companies laughed at us, including some old Mac based developers who were abandoning ship. When we launched our original Toaster, analysts mocked our move; and back then, even Apple employees looked at us in shock. But we knew about the persistence of platforms and the tenacity of their adherents.

By aiding an ailing platform, you gain customer loyalty - exactly our plan with the Mac. Even if Apple didn't pull out of the flames, we were winning the hearts of Mac users by showing support for their beloved computer in the worst of times. As other companies turned tail and split, we ran headlong into the arms of the remaining Mac faithful.

Then Superhero Steve - with an "S" on his chest - rocketed to the rescue. Steve Jobs, the very man who started the revolution, was back to re-ignite a demoralized and flailing company. Three short years later, Apple stock is rising, consumer enthusiasm is soaring, and the fruity flavors are flying off the shelves. The company also is storming the graphics, digital video and 3D markets. Wow! In hindsight, NewTek's move to the Mac appears clairvoyant. Not really. Steve Jobs is the visionary in this story.

But with our steadfast solidarity, we have accumulated gigabytes of goodwill with Apple and the Mac community. With Apple's assistance, LightWave 6 has implemented the newest technology to come out of Cupertino. Now, while other companies are scrambling to make their programs Mac OS X compatible, we have a native version of LightWave ready and waiting for Apple to release OS X.

Our loyalty to the Mac has been rewarded. Apple is ascending again and NewTek is alongside riding on the jet stream.

Thanks Steve!

NewTekniques online

NEW ART GALLERY

www.newtekniques.com/ArtGallery/

The NewTekniques Art Gallery is designed to showcase the graphic work of users of LightWave 3D, Inspire 3D, and Aura artists.

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COLUMNS

LightWave Fundamentals: Boing Ball - An introduction to surfacing using the Amiga mascot.

The Idea Factory: Odds and Ends - How an independent videographer in a small town pays the mortgage.

Playing with Fire: Aura Tutorial — Steve Bowie brings us Part I of Creating Retro Toaster Wipes. (See page 16.)

Strange New Worlds Visited - Jon Carroll lands a LightWave-rendered spacecraft onto the Mars landscape he built with the World Construction Set. (See page 42.)

Hear Ye! Hear Ye! - Bob Ketchum, the Clown Prince of Audio, speaks seriously about good sound.

REVIEW

Pro Templates
(Windows)

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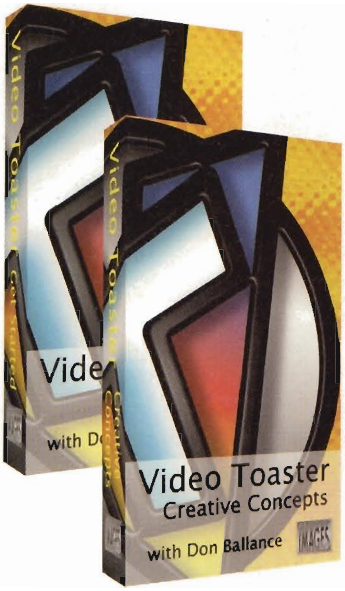

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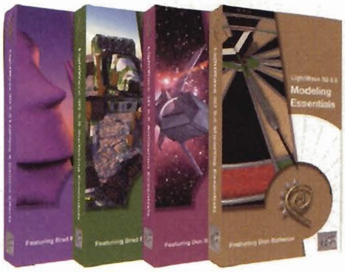

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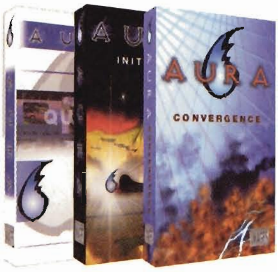

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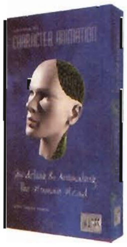

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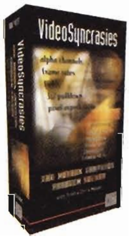

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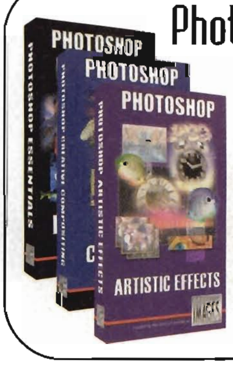

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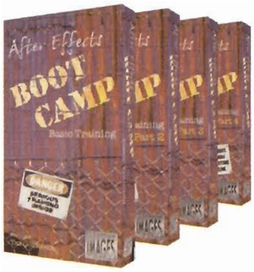

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Web #103

New or Retooled

Boris FX 5.0 & Boris Graffiti

Boris FX announces **Boris FX 5.0**, the industry standard plug-in application which provides unique effect filters and a complete user interface for animation and layering. Integrated directly into a Speed Razor on the New Video Toaster system, **Boris FX 5.0** adds a new breath to effects creation and increases productivity with a range of new features such as 3D text, Effects Library browser and keyframe enhancements. MSRP for the Standard version is $495 USD, and the Professional is $995. Upgrades are available.

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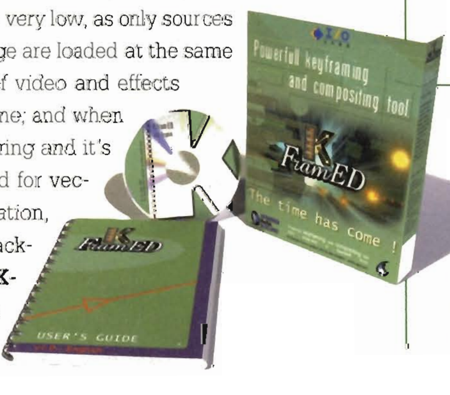
Boris GRAFFITI

Boris Graffiti is the first titling plug-in to deliver 2D and 3D vector based title animations for both Macintosh and Windows platforms. **Boris Graffiti** allows complex titling effects and animation to be created easily within Speed Razor. **Boris Graffiti** comes with a variety of text effects including particles, light sources, and motion blur for creating high quality animations. **Graffiti** also provides common text formatting options including kerning, tabs, and word wrap while adding 3D animation tools and filter effects. **Boris Graffiti** is priced at $495. For further details, www.BorisFX.com.

KframED

I/O Labs has developed **KframED**, a set of 50 powerful compositing and special effects plug-ins for Aura. This set is directed by the master plugin to generate node based compositing, using an integrated interface for both node and keyframe editions. The nodes can handle Zbuffers, images, animations, video, and sound. The memory usage is very low, as only sources needed to generate one image are loaded at the same time. You can have hours of video and effects prepared with a basic machine; and when you're set, launch the rendering and it's done. Functions are included for vector based character generation, highly accurate motion tracking, and chroma keying. **K-FramED** will support Aura 2.0. www.kframed.com.



Foundation Institute

Foundation Imaging is developing a full service educational center located at its production facility in Valencia, California, to teach the Foundation 3D Exchange Curriculum. In cooperation with 3D Exchange, the computer animation training school, Foundation Institute will offer a multi-tiered educational program including beginner through expert classes, from one week through a two-year full certification program. The curriculum will be based upon 3D Exchange's standardized, industry recognized program emphasizing NewTek's LightWave 3D. The updated 3D Exchange curriculum incorporating Foundation Imaging guidelines will be available for purchase through a NewTek Authorized Training center only. The new version will be available in Summer 2000.Contact Karen Tosoni, 661-257-0292, www.foundation-i.com.

Shave and a Haircut

Created by 14 year industry veteran Joe Alter, **Shave and a Haircut** is an economical and easy to use commercial hair rendering and grooming solution. **Shave's** dynamics algorithm can simulate long hair and self-casts true shadows, critical for hair realism.

SHAVE AND A
HAIRCUT

Shave integrates bi-directional IK into the sculpting process, making the hair combing quick and intuitive. An incredibly fast IK engine allows for easy sculpting, and displacements that **never** freak out.

Shave and a Haircut is a stand-alone application and an integrated render plugin that works with LW 5.0 - 6.0, **Inspire**, **Messiah**, **Metamate**, and others. When you order, you receive a dongle (and free, unlimited render farm licenses) and can download free current updates from the web, www.joealter.com.

Aura FX 4.0

Visual Inspirations is proud to announce the release of Volume 4 of our popular **AuraFX** series, 20 new macros and plugins to make Aura sing, all for only $99.95! At the same time, we have lowered the price on our other volumes and have put together a Combo Set of all four volumes for only $249.95. Please visit our new Aura Tutorial section where we have included many free scripts. Go to www.vionline.com/merlin/aurafx4.html for more information. We have also put some sample AVI files on our site to help show what **AuraFX** can do.

VideoToasterNT.com

Safe Harbor Computers presents the redesigned **VideoToaster NT.com** website that provides up-to-date, accurate information and detailed product specifications about the Video Toaster. The site's interactive forum allows for questions to be answered by NewTek and Safe Harbor representatives as well as other Video Toaster NT users.

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I/O labs, Safe Harbor and NewTekniques announce a contest for the new KframED, the compositing & special effects plugin for AURA.

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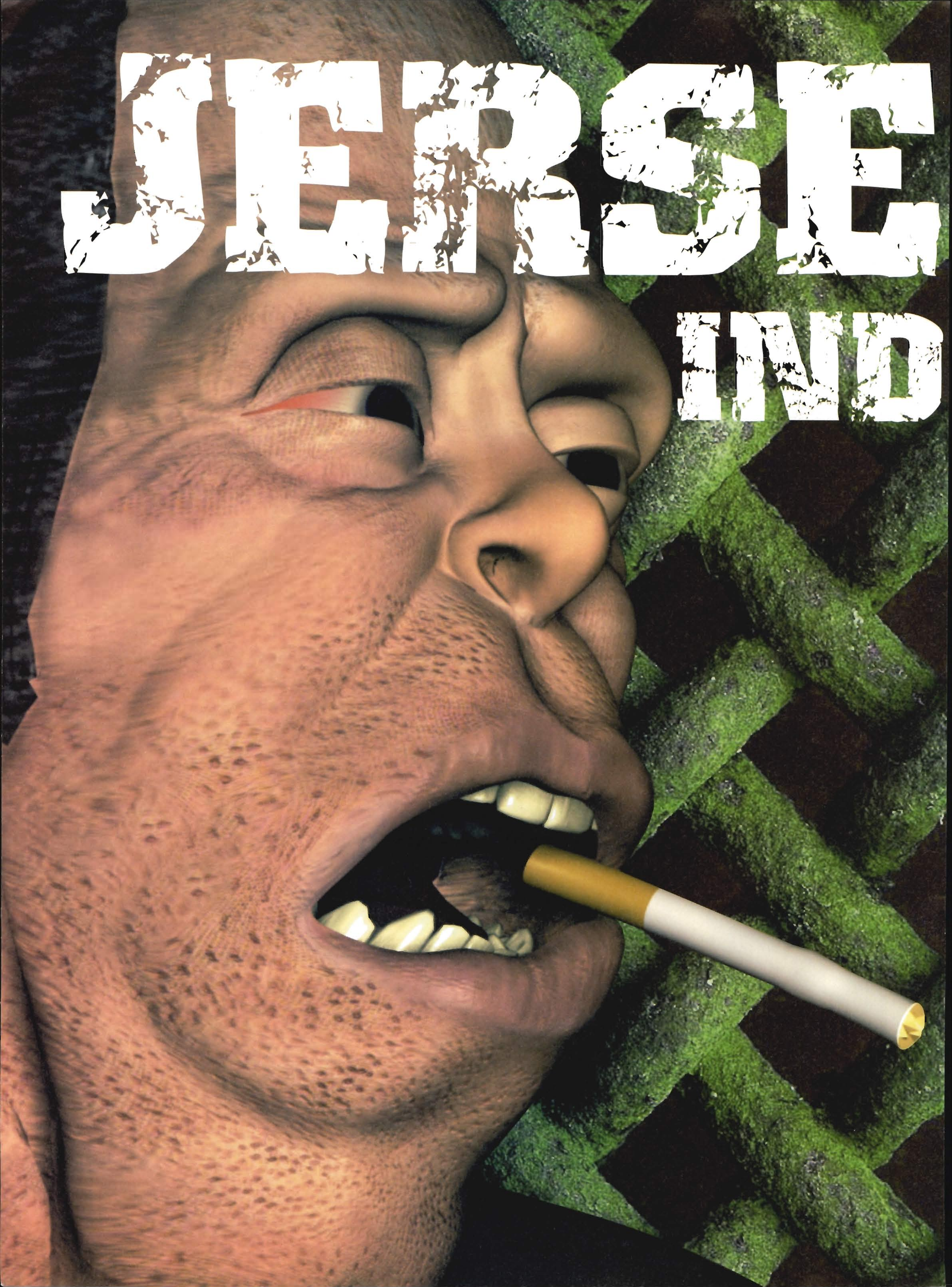
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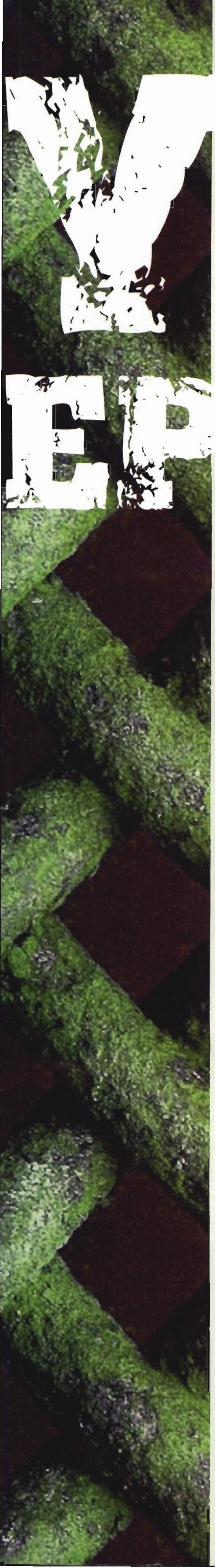


V

Wins a vote for

EPENDENTS

two garbage men cleaned up at Imagina 2000. Joey and Tony, Joe Alter's antiheroes from *Jersey*, won Best Virtual Actor of the Year at the prestigious international animation competition in Monaco. They beat the big boys: Lucasfilm's *Star Wars: Episode I*, Pixar's *Toy Story 2*, and Sony's *Stuart Little*. Next, the truckers trash talked their way into SIGGRAPH's Electronic Theater. Two more kudos collected with LightWave.

The dirty little idea surfaced when David Pritchard, the then CEO at Film Roman Productions (the *Simpsons*, *King of the Hill*), saw Alter's LipService experiment, "Zeke," and offered Alter a development deal. "He said, basically, 'here's a little cash, go home and make me something really cool,'" Alter recounts. "'And by the way, we're going to pair you up with one of the creators of the Batman cartoon series, Eric Radomski, to produce and help things along.'"

Alter came up with six projects but favored the truckers from Jersey. To sway the jury, he hired his neighbor, John Brown, (a sculptor who worked on *Species II* and now is involved with Rick Baker on a new *Planet of the Apes*), to make a maquette for the presentation.

"I pitched with Eric, and did the voices and waved around the maquette - David must have thought I was crazy - but he loved the idea," Alter admits. "It was my simplest idea: get a couple of garbage truck drivers from New Jersey into a truck and see what happens. We would emphasize dialogue and facial work." Film Roman gave the green light, but only wanted the short to be rendered at Internet rez. In a prescient state, Alter insisted on film resolution, because he wanted to enter some festivals.

Describing his two talkative teamsters, Alter says, "You've got a big fat guy, Joey, and a tall skinny guy, Tony. Tony is sorta Steve Buscemi's character from *Fargo*, on speed - the last guy in the world you'd want to be stuck in a truck with for eight hours a day. Joey is the straight man that puts up with him - a big beefy meat and potatoes guy with no sense of humor." The inspirations for the characters are Craig and Salvatore, Alter's old Cadillac Seville cruising buddies.

After struggling with the storyline, Grant Moran from Warner Brothers was hired to help out. Describes Alter, "We got together for some coffee and I showed him what I had, and he came back the next day with about 12 pages, circles under his eyes and a big goofy smile." And a working script.

Two professional actors, Bruce Kronenberg and James Altuner (both from Jersey) provided the voice talent. The recording was hilarious. "It's a good thing they had a soundproof booth because we were laughing our asses off on the other side of the glass."

The session, recorded by sound engineer, Geo Moscardino, yielded 40 minutes of material that Alter took home on CD and started piecing together using a Wave Player. After Film Roman signed off on a rough audio cut, Alter returned to the studio and "I laid down the primary sound effects (gear shifting, tire squealing, slaps and farts) and went home to begin animating.

"I finished the animation and rendering at my girlfriend's place in Paris." (She has a cameo role in the photograph as Joey's daughter.) "Her visa had run out here, and hell... Paris! Why not! Film Roman said 'okay,' so off I went."

Alter did everything CG on *Jersey*. "I wouldn't want to do it *that* way again, but funds were limited and we had plenty of time. Basically I digitized the faces with MiniScribe into LightWave and applied the textures," Alter describes. "In LightWave, I sculpted a mouth-open and a mouth-closed version - then brought those into LipService." One of Alter's amazing inventions, LipService, was used for facial animation and sculpting.

Alter started the project with LightWave 5.0 and switched to 5.6 midway through. "I liked the simple, unencumbered interface, the open extensibility (plug-in writing), the cooperative and helpful company, and the plethora of unbelievably advanced and cheap plug-ins available," Alter states. "It's not a hard choice. These guys work really hard to make things easy.

"The way I figured it, most of the tools that cluttered up the high end systems, weren't really all that functional, so as long as I could get at the data in LightWave, I could force it to do what I wanted." And he has.

"All of the lip-synching was key framed in one long sequence in LipService, then using LipService's live puppeteering, I performed the secondary expressions - eyebrows, smiles, frowns, winces, and blinks - live with the mouse. The facial animation and modeling for both characters took about three to four days." (Ed. Note - For a tutorial by Joe Alter about great lip-synching and realistic expressions, check out the next issue of *NewTekniques* devoted to character animation.)

For Alter's egos in *Jersey*, "we were looking for a situation," says the animator, "that would cover as much emotional range as possible, with the simplest premise." (Tony salivates over a photo of Joey's buxom daughter while the two are trapped together in the cab of their garbage truck.) "There's a lot of electricity created just simply cutting back and forth between the characters and watching their reactions."

When the blocking and camera angles were determined, Alter began the bodywork. "This took much longer than I would have liked, and was done with simple rotational animation on some bones in LightWave. The bodies mostly are comprised of spheres that would be placed under the cloth. The tests looked very weird and I had a hard time convincing Film Roman that this was going to work."

For the last step before rendering, the Motion Designer cloth simulation was applied. "Motion Designer is really a great utility," Alter enthuses.

The texture maps made in Photoshop, he continued, were "nothing fancy. They're just planar mapped. There's a color, bump and specular map. The specular map is *really* key, particularly on film. It allowed me to give them some grease on their faces without making them look like plastic."

Alter credits LipService for much of the success of *Jersey* at Imagina. "I just about fell over when I found out that it won," Alter says. "I guess the main recognition was for LipService's advances over the current state of the art."

Winning is "really phenomenal, it's given me a big head," Alter jokes. "I've started getting calls from agents and lots of renewed talk from Film Roman about maybe making a movie or TV series. It's all just pie in the sky at this point - *but I have a treatment.*"

The Long Haul to SIGGRAPH

Who is this king of the heap, prince of the poubelle? Joe Alter began his digital career at age 11 as a lab apprentice in his hometown of Chicago where he swept floors in exchange for computer access. "I wrote a couple simple games and got a summer gig in high school doing rollover (arcade to C64) work for Atari." With this background, he garnered a scholarship to Syracuse University's Newhouse School, where he ended up studying fine art and computer science.

"In 1984, I was dragged to SIGGRAPH, kicking and screaming," Alter says. "The company I was interning for (ICOM Simulations) sent me. I really had little interest in going, and would have rather spent the time getting stoned, chasing girls and whatever else I was doing at 18. But it really was an amazing year to be introduced to CG.

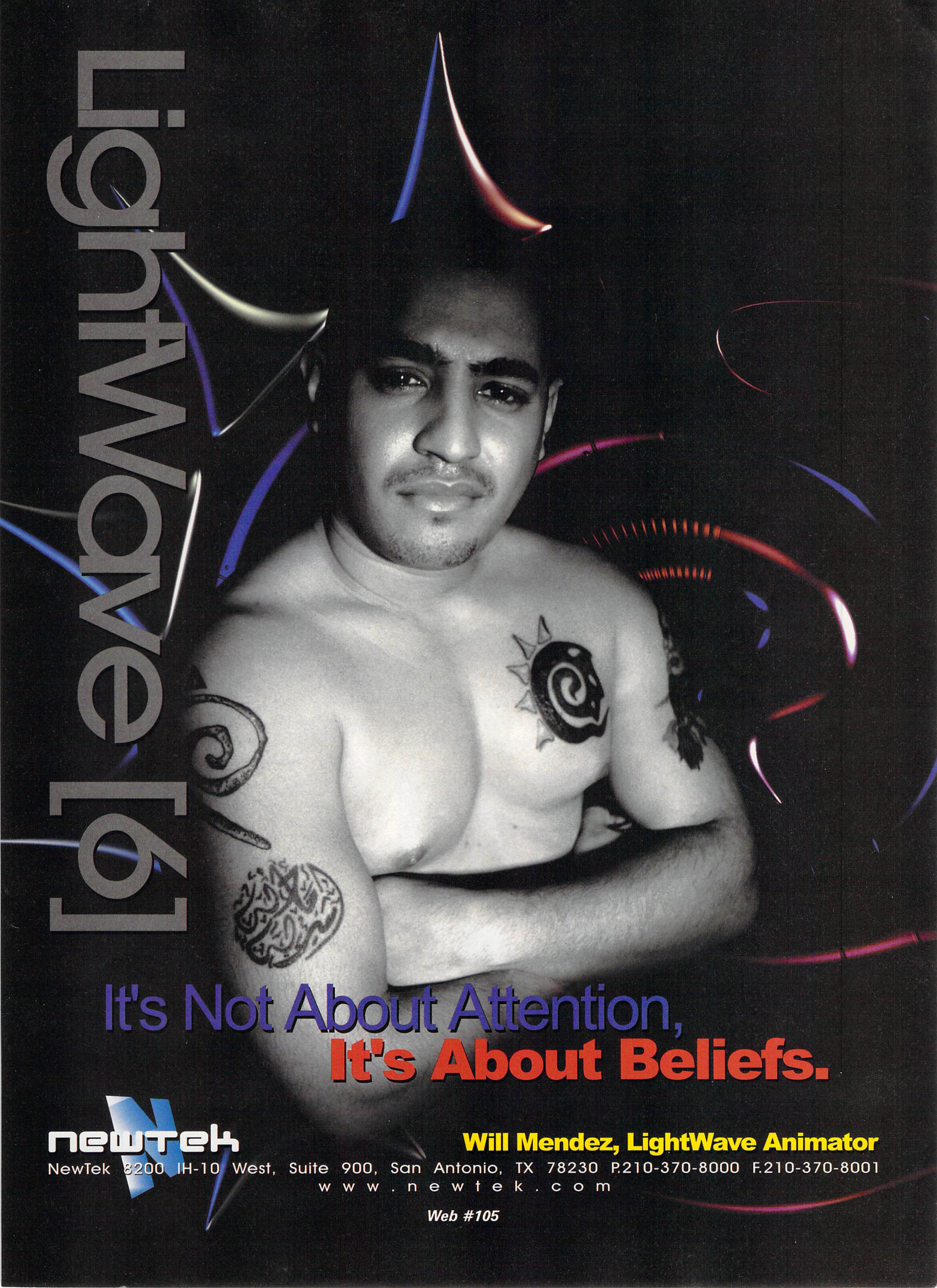
"Magi was showing clips from the upcoming *Tron* movie, Pixar/Lucasfilm was showing clips from *Wrath of Kahn* and their new Reyes software. Robert Abel was showing *Sexy Robot*. I went back to school, but kept thinking I wanted to work with some of these guys and learn more. I read an article about Abel (a visual effects pioneer who worked on *2001* and *Tron*) about how they didn't just hire mathematicians, but artists as well. I had ordered an Amiga 1000 several months before it even came out and was very excited about it. I wrote a very simple modeler in BASIC. So I dragged my portfolio and Amiga to L.A. and begged them for a job."

Over the years, Alter has worked at a Who's Who of visual effects studios: Boss Film, Phil Tippett, Metrolight, ILM, Warner Digital, Centropolis and Dreamworks. "In between, I did a lot of stuff under the name 'Fourth Dimension' for *Star Trek: The Next Generation* and various commercials. I was using a package called Digital Arts, one of the first PC based 3D systems - the dongle cost like 17k. Ouch!"

He did animation work on several shots in *The Mask*, as well as shader and software design. Alter also labored on several sequences in *Cliffhanger*, *The Prince of Egypt*, *Godzilla*, *Blink*, and *Three Wishes*. "Though I never actually worked on *Jurassic Park*, I was the co-creator of the Dinosaur Input Device used to animate them. Same for *Jumanji*, didn't work on it; but the hair render was based on a prototype that I wrote a year prior." Currently, Alter is developing "Shave and a Haircut," a hair grooming and rendering application that works with LightWave, (to be reviewed in the next issue).

Sixteen years after his first trip, Alter returns to SIGGRAPH with *Jersey*, honored by Imagina and now to be showcased at Electronic Theater. The film also has been invited to six more festivals. "I've been so busy with 'Shave and a Haircut,' that I haven't really had much time to promote it."

About his future, Alter muses, "Who knows! Who cares? I'm happy writing tools, just as long as I get to make a *Jersey* once in a while."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Web #105

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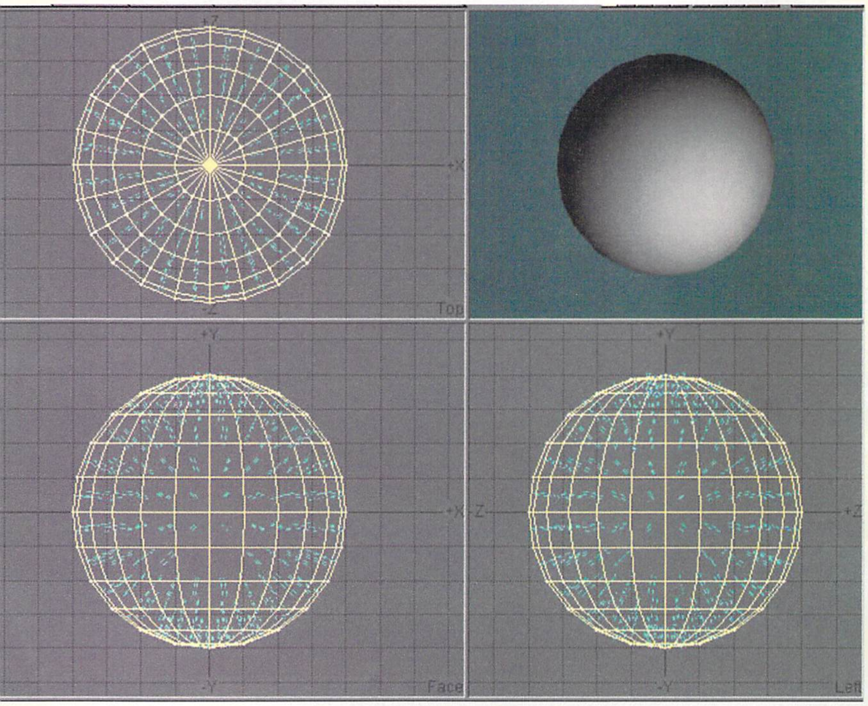
REACH FOR THE SKY

BY
"MONTANA"
JOE LAWSON

We all live under the majestic marvel of a sky. By capturing that celestial splendor, whether a summer's blue sky with high cirrus wisps or a surreal orange ozone with twin crescent moons, you can conjure evocative 3D realms.

At Foundation Imaging, we use a technique called Skyball to umbrella our virtual worlds. The Skyball is not a new concept. Basically, you are making a spherical backdrop to enclose your scene. Creating Skyball set-ups in advance provides a quick and efficient method of producing a variety of environments and lighting.

Figure 1



1. To build the Skyball, open Modeler and create a default sphere centered at zero with the following numerical values: X radius: 4km, Y radius: 4km, and Z radius: 4km.

Give the polygons a surface name appropriate to the type of Skyball. For this tutorial, I named it "GENERIC_SUNSET_SKY." Also, [check] [Smooth]. Afterward, flip the polygons so they face inward as in Figure 1. Either use the [Flip] button under the [Polygon] tab or use the keystroke [f].

NOTE: Don't double-side the surface for this object, instead use inward facing polygons. Double siding can cause potential render difficulties and add to the render time.

Name the object "Skyball_SUNSET_1" and save it in a new Objects directory called "SKIES."

2. Now, open Layout. First, keyframe the Camera in its current position *before* loading the Skyball. Layout will reset the grid size to accommodate the size of the first loaded object. If we had loaded the Skyball first, the grid size would jump from 1 meter (the default) to 2km and would set the Camera far outside of the object. We want to be inside the object in the same way we are "under" the sky. The camera will remain steady by keyframing the camera first - a good habit to practice before loading any of your objects.

Next, we will turn off some attributes of the object itself. Go into [Objects] panel, and under [Appearance Options] turn off, [uncheck], [Self Shadow], [Receive Shadow] and [Cast Shadow], and then turn on, [check], [Unseen by Rays]. Depending on the needs of your scene, you may choose to

[uncheck] [Unaffected by Fog]. Usually, we choose to [check] [Unaffected by Fog].

Now, practice the cardinal rule of computing: Save, and save often. Create a new Scene directory titled "SKIES" and save this scene as "Skyball_SUNSET_1." Personally, I like to keep the Object and Scene names as similar and as descriptive as possible in anticipation of the day when I will have to track down long forgotten items.

Now, you have your starting scene file and your object. Next, we will paint the sky image.

The Big Sky Country

To create the skies for the Skyball, people use different methods: taking a series of photographs of the real sky and stitching them together, painting a sky image in Aura or Photoshop, or using Sky Tracer. I like to combine my own stitched photos and Photoshop.

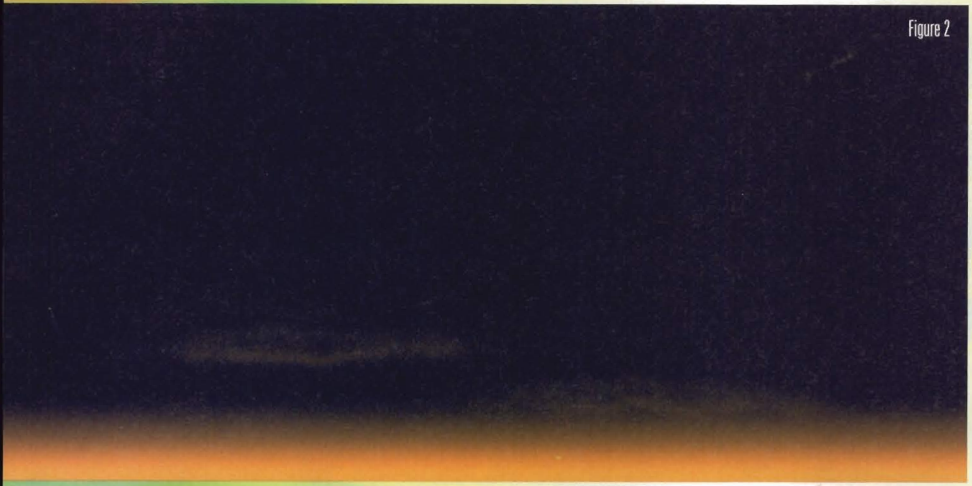


Figure 2

3. For a quick and simple Skyball, I created my gradient image in Photoshop. The key is circular consistency, meaning the ends of the graphic, when wrapped, should join seamlessly. Making an invisible seam can be tricky; but with a gradient, it is easy.

In Photoshop, I start with a new canvas that is 2000 pixels wide by 1000 pixels tall. (This image size yields good detail when wrapped on the inside of the Skyball). Using the gradient tool, create a linear vertical gradient that looks roughly like Figure 2. (I wanted a sunset sky, so the blue is R:38, G:45, and B:54 and the orange is R:248, G:174, and B:78.)

Feel free to paint a horizontal cloud or two on another layer. To keep the image seamless, don't paint along the left, right, or top edge. For added variety, you might pepper the blue part of the sky with single pixel stars of varying transparency to achieve a twilight look. (I highly recommend that you paint with a pen and tablet and not your mouse.)

When you are done, save the image as "Skyball_Sunset_1" in a new image directory titled "SKIES."

4. In Layout, load the image using the [Images] panel. Then, in the [Surfaces] panel, select "Generic_Sunset_Sky" from the [Current Surfaces] pull-down list. Next to the [Surface Color] button, choose [T], (which stands for Texture Map). Under [Texture Type], choose [Spherical Image Map].

You want the image to cover only the top half of the sphere. So, under [Height Wrap Amount], choose 2. (The image will duplicate itself on the bottom half of the Skyball, but your ground plane should obscure it in the scene.) If you want to double the image horizontally, do the same for the [Width Wrap Amount].

If you are using the 2000 by 1000 pixel image, its resolution is high enough that you can turn off, [uncheck], [Pixel Blending] and [Texture Antialiasing]. If your image is smaller, you may want to keep the defaults on, [checked]. Basically, pixel blending and texture antialiasing allow the camera to move closer to low resolution image maps by blending the pixels slightly - a not so elegant way of pulling just a bit more out of your texture.

Select [Use Texture] and return to the Layout Window. Now, when you click [F9] to render, you should see the gradient and the clouds you created in the distance. Save the object and save the scene. You now have a working Skyball ready to load from scene.

Let's go a step further and add sunlight into our scene.

Dialing In

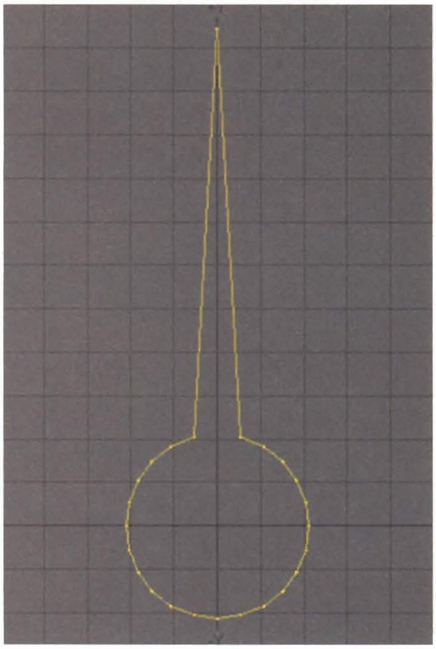
For this tutorial, we will be creating two elements: the lights and the objects to control them.

Before we add lights to the scene, we will build a "sundial" to assist in setting the lights, in our case the sun. LightWave itself does not ship with any kind of orientation setup for lighting. The sundial is one solution we employ at Foundation Imaging.

5. In Modeler, set your grid size to 1 meter (this keeps the object at a usable and realistic scale). Create an arrow polygon on the Z axis that looks roughly like the one in Figure 3.

This arrow will serve as a pointer indicating the direction of the sunlight. Remember to put the round part at 0 for the X, Y and Z axis. A

Figure 3



quick way to do this is to create a disk and [Center] it. (The feature is found in the [Objects] panel in the [Custom] pull-down menu.) Then model the remainder of the arrow. Change the Surface name to "Sundial" and make it double-sided.

Save the object in the "SKIES" directory as "KEYLIGHT_ON_B_ROTATOR."

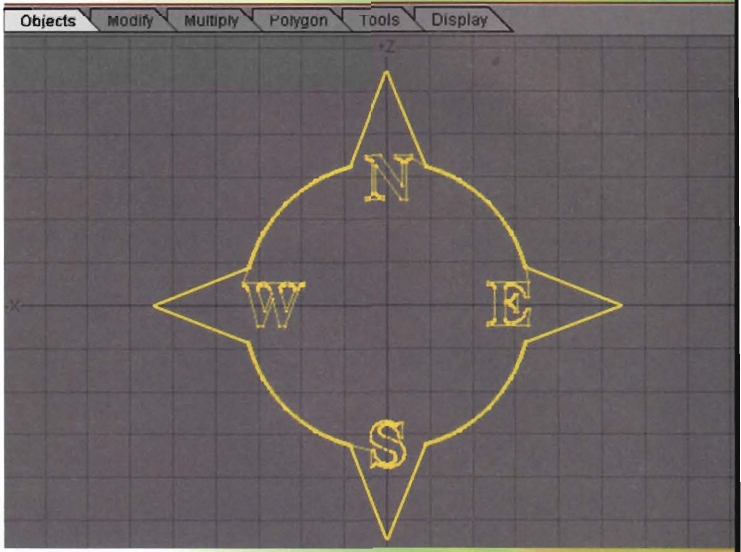
6. Next, create an object on the Y axis like the one in Figure 4. You may wish to add the N, S, E, and W, like a compass, on your object; though this is not absolutely necessary. Again, center the object. Make the surface double-sided and title it "Sundial_Base." Save the object in the "SKIES" directory as "KEYLIGHT_ON_H_ROTATOR."

7. Now, in a new scene in Layout, first, load the "KEYLIGHT_ON_B_ROTATOR," then the "KEYLIGHT_ON_H_ROTATOR." Parent the "KEYLIGHT_ON_B_ROTATOR to the "KEYLIGHT_ON_H_ROTATOR."

For both objects, in the [Objects] panel, [Appearance Options], turn off, [uncheck], ALL shadow options; and turn on, [check], [Unseen by Rays], [Unaffected by Fog], and [Unseen by Camera]. Leave [Object Dissolve] at [0%]. These settings will allow you to see the objects and work with them, but will not affect the scene.

8. Next, turn off all movement options on X, Y, and Z for both objects. Simply select the object in the Layout Window; choose [Move] and click on [X], [Y] and [Z] so they are not yellow.

Figure 4



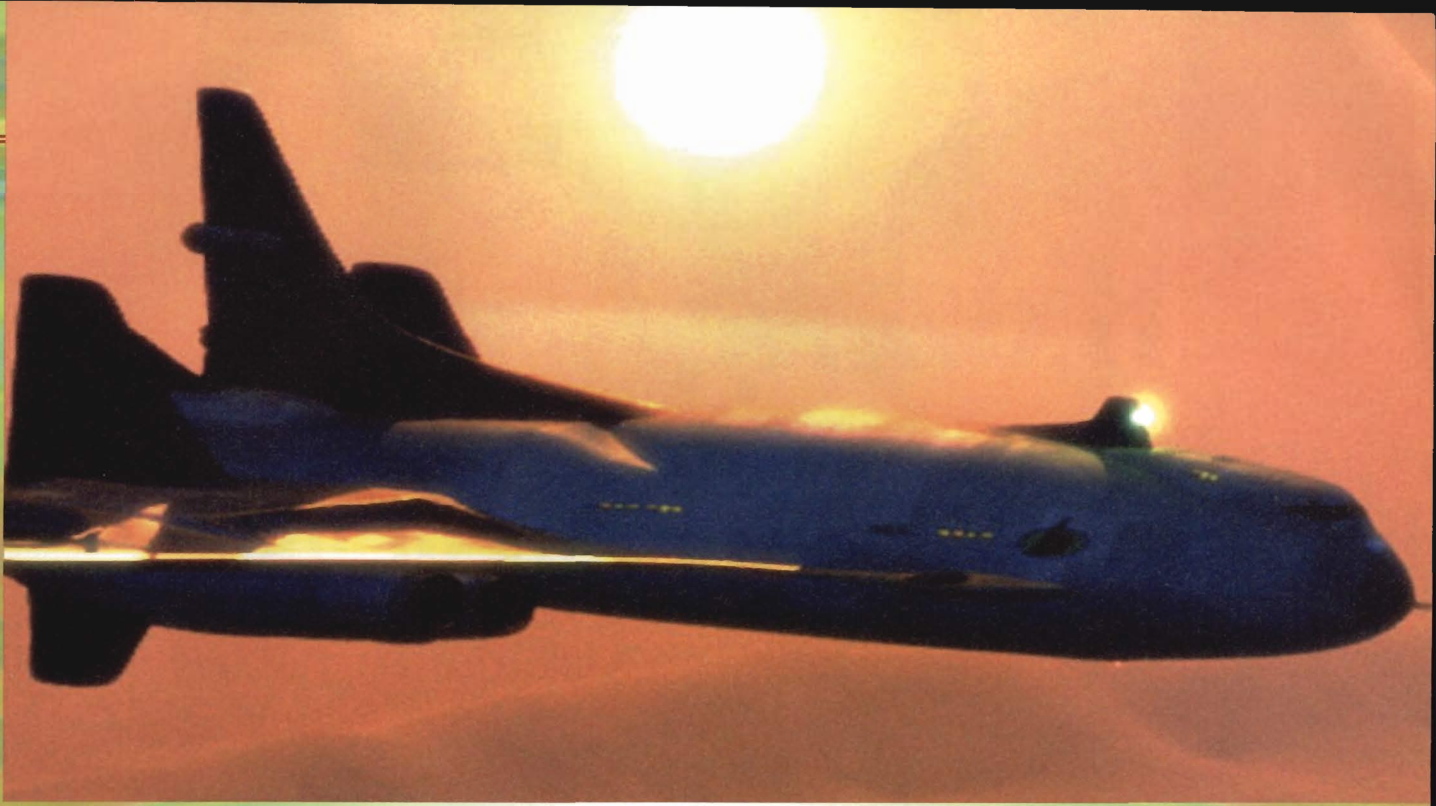
Then, select "KEYLIGHT_ON_B_ROTATOR," click on, [Rotate]; and turn off [H] and [P]. Now this object only can be rotated on B. Turn off the [B] and [P] rotations on "KEYLIGHT_ON_H_ROTATOR."

Save the scene in the "SKIES" directory as "SUNDIAL." Now on to the lighting.

Here Comes the Sun

9. First, in the [Lights] panel, click [Add Light], click [Light Type], and pick [Distant Light] and then [Rename Light] to "SUN". Since we are recreating sunset, the light will skew toward the orange end of the spectrum. So, set the [Light Color] RGB values to: R:240, G:188, and B:79. Leave [Shadow Type] set on [Raytrace]. Adjust [Light Intensity] to [150%].

10. In the Layout Window, parent "Sun" to "KEYLIGHT_ON_B_ROTATOR." Then, [Move] the light numerically [n] on the Y axis to 5km, which will place the light outside our Skyball. Finally, set "Sun" to target "KEYLIGHT_ON_B_ROTATOR." This light will provide a single source of overall illumination that should duplicate closely sunlight



aiming straight down the shaft of our "B_ROTATOR" object.

Now, using the H_ and B_ ROTATORS, you can rotate "Sun" according to the time of day. The technique is much better than using nulls because the sundial visually tells you the exact location of your primary light.

11. In the [Lights] panel, [Clone] "Sun" and [Rename] it "Sun_Point." Make this clone a Point Light with [Shadow Type] turned [Off], [No Diffuse] [checked], and [Light Intensity] to [100%]. This light will add slightly to the specular level of the scene, which can enhance the reality of the objects. You may have to play with the light's values for any given scene.

12. Now, under [Current Light], select "Light" (the scene's default light) and click [Clear Light].

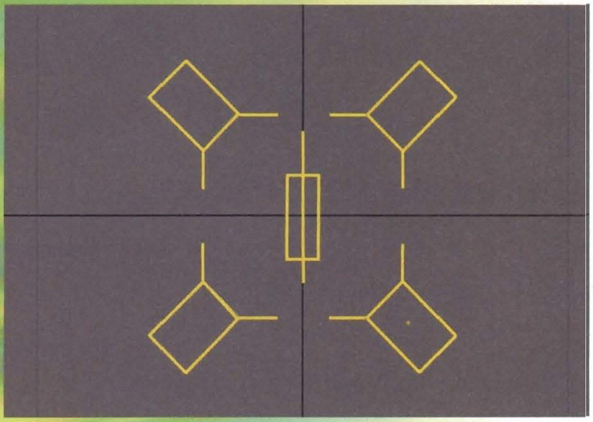


Figure 5

Set the [Ambient Intensity] value to [5%] and change the [Ambient Color] to R:134, G:155, and B:196. These setting will provide a *very* slight illumination that will fill in overly dark areas.

13. Because the atmosphere still reflects and refracts mostly blue light, we will need to set our fill lights to a dark blue to balance with the bright orange. I basically like to use a technique borrowed from the producers of the game. *Riven*, with some minor modifications.

First, create a Distant Light, with no shadow options or specularity, at 40% brightness and with the color values at R:53, G:73, and B:111. Place this light 5km on the X and 5km on the Z and targeted to "KEYLIGHT_ON_H_ROTATOR."

Clone the light three times, then place those lights so they resemble Figure 5. Finally, create a fifth clone and place it at 5 km on the Y and 0 on the X and Z. These five lights will provide overall blue illumination to your scene.

14. The final step is to create one more light. Turn off all of its options and set its brightness to 0. Rename the light "AMBIENT 5% R134 G155 B196." This long name serves as a reference to the current scene's ambient light values. You can use this description as a reminder in all future scenes because Load from Scene does not alter the existing scene's ambient values.

Save this scene as "SKYBALL_LIGHTS."

Excuse Me While I Kiss the Sky

15. Now, in the Layout Window, load your original Skyball scene, "Skyball_SUNSET_1."

To load your lights into this scene, go to the [Objects] panel, click on [Load from Scene] and load " SKYBALL_LIGHTS."

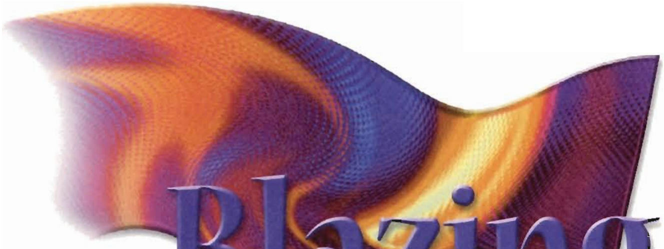
Jump to the [Lights] panel and delete "Light," (the existing Skyball scene default light). Adjust the ambient light values to the settings indicated by the name of our reference light.

Save the scene. Voilá! You have constructed an instantaneous, ready to load, Skyball and lighting setup that will streamline your future projects.

You can fiddle with the fill lights and the key light to create a variety of lighting schemes. Remember, when you replace the image on the Skyball, save the Skyball object under a different name for new skies.

You now have a good starting point to design a variety of skies. Experiment. Salt to taste! The sky's the limit.

Joe Lawson is a CGI Director at Foundation Imaging and is heading up the second season of Max Steel.



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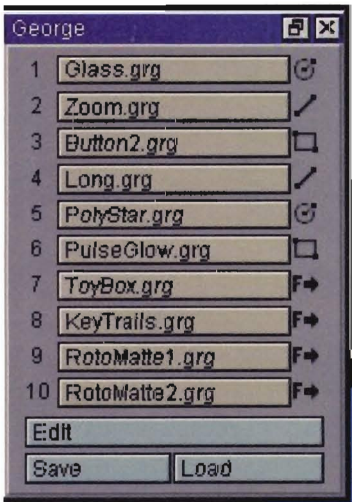
A Wipe of Your Own, By George

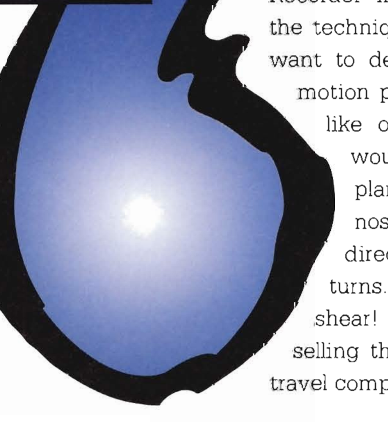
by Steve Bowie

Creating Retro Toaster Wipes, Part II

Part II? Where's Part I? Stop riffling through the pages of the previous issue for a minute, and I'll tell you where to find Part I. With the demand for column inches off the scale, the Editors decided to split this two-part Aura tutorial between this issue and the NewTekniques' website. (You can find Part I - along with the 4 files for this tutorial - on the Web at www.newtekniques.com/BowieAura1.html.) Each tutorial stands on its own, although they work best as a pair.


George
1 Glass.grg
2 Zoom.grg
3 Button2.grg
4 Long.grg
5 PolyStar.grg
6 PulseGlow.grg
7 ToyBox.grg
8 KeyTrails.grg
9 RotoMatte1.grg
10 RotoMatte2.grg

George Panel

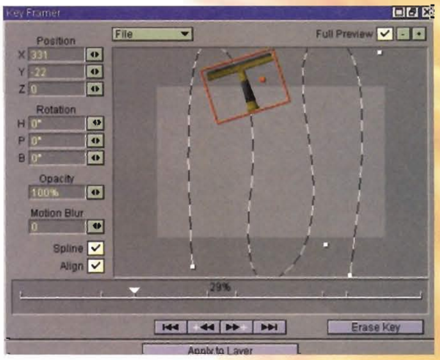


Does a wave of nostalgia overcome you every time you think about those classic Toaster wipes? Or is that nausea 'cuz Kiki's kick doesn't cut it any more. Either way, I have the remedy - custom design your own *trés, trés cool* wipes in Aura with a little help from George.

I consider this exercise fairly involved, so you should know the Aura basics. However, once you master the process, you can create a similar wipe from scratch in perhaps 10 minutes.

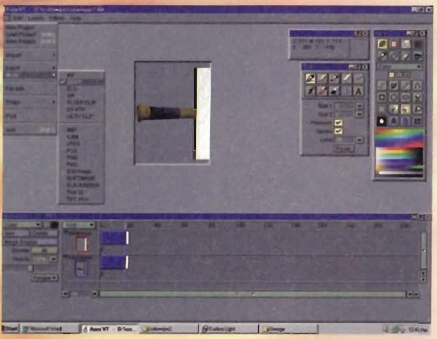
In Part I, we created a zigzagging wipe, but I wasn't satisfied. The Stroke Recorder imposed some limitations on the technique. For example, what if we want to design a wipe with a curved motion path? If our wipe object was like our sponge from Part I, we would succeed – but with a jet plane as a brush? The plane's nose would point in one fixed direction as it careens through its turns. Talk about sideslip and wind shear! You would have a hard time selling that animation to an airline or travel company.

To create an appropriately twisting and turning animbrush as a "wipe object" for a curving path would be impractical. What to do? The Key Framer filter has an "Align to Path" option, just like LightWave. Indeed, with the Key Framer filter and a little effort, our wipe object nicely aligned to a "flight path." Whether a 747, a John Deere, or a window squeegee, you can design a spline path that moves back and forth over your imagery in nice sweeping arcs, while maintaining a proper "angle of attack" ... gorgeous! So what's the problem?


Key Framer
Position
X 331
Y -22
Z 0
Rotation
H 0°
P 0°
B 0°
Opacity
100%
Motion Blur
0
Spline ☑
Align ☑
Full Preview ☑

Key Framer with brush & Motion Path loaded

We do not want simply to create an animated color version of our wipe object. In Part I (you did check out Part I, right?), we used the Stroke Recorder "Lines" mode to build the animation needed later as an "Eraser." Sadly, the Key Framer filter has no Lines mode. It faithfully stamps down brush after brush, frame by frame; but alas, no "trail" of digital paint accumulates behind our wipe object!



Creating the second brush

Is all lost? Must we resign ourselves to dull, drab old "Part 1-type" wipes? Not while the mighty "George" is around to help! George is Aura's native scripting language. Clicking on the little [Captain's Hat] button in Aura opens a user-configurable panel hosting a plethora of useful functions from various generous contributors. (See George Panel image) Still, I could find no ready-made solution to my KeyFrame quandary.

So, I devised a script that would accumulate the trails needed to accomplish my goal. I released the result, "KeyTrails.grg," to the public in March (via the Aura Mailing List hosted on eGroups.com.) As often happens with scripts, KeyTrails outgrew its original purpose, and now offers a number of other very interesting functions. For this article, though, we'll stick to its *raison d'être.*

Hi ho, hi ho ...

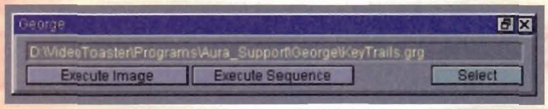
In the interest of finishing in a reasonable amount of time, I'm taking it easy on you. The necessary brushes, George script, and a motion file for your first attempt are supplied online. For hardy sorts who spurn such niceties, I have added some "Do-It-Yourself"notes (in red type) at appropriate points.

Enough chitchat – let's get to work. Start Aura. Create an empty anim layer 180 frames long, selecting all its frames. I named mine "squeegeecolor." 180 frames ordinarily might be considered long for a wipe, but this is no ordinary wipe! In this situation, more frames contribute to a smoother transition. In the end, we will cut the length in half when we interlace it for video. If your target medium is not video, you could do a shorter version; but, for now, just do as you're told and don't give me a hard time - OK?

Import the image named "squeegee1.dip" as a brush - I knocked this off in about 3 minutes in LightWave - to serve as our wipe object.

The brushes are in Aura's "Deep" (.dip) file format, which preserves the transparency information. 32 bit Targa files are an acceptable alternative.

On the subject of "wipe objects," almost anything will do - but (as explained in Part 1) a bit of extra work is involved with objects having a profile with a negative taper away from the leading edge. These may deposit a trail of paint ahead of the point where we want the wipe to occur. We do not want transparency occurring as the handle of a paintbrush wiped over our image. For example – it would look much better if only the trailing edge wiped away the old frame(s). To accomplish this, we need a second "trimmed" brush (based on the first) to actually build the "trails layer."



D:\VideoToaster\Programs\Aura_Support\George\KeyTrails.grg

Misc. George

Now, open the Key Framer filter. Load the motion file named squeegee_motion.akf. Of the eight keyframes, all except the first and last have the Spline setting turned on (for smooth curves).

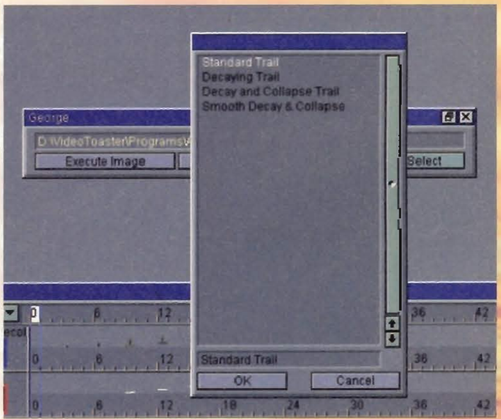
I experimented before I established this motion path. You'll notice that any sharp bends occur off-screen. With this particular wipe, narrow "misses" tend to happen between the sweeps of the squeegee brush as it pivots tightly. I easily could have made an extra "sweep" or two across the screen to clean these up, but opted for this version to keep the duration shorter. (See Key Framer image.)

I tried four or five times before this motion was right. Variations in the profile of the brush and the duration of the wipe all play a part in the difficulty. A big "blocky" shape (say, a "Space Shuttle" brush) which deposits a substantial trail would work more easily. Our squeegee, with its very narrow trailing profile, requires care, to ensure that the trailing images actually overlap from frame to frame as the alpha channel is built. Also, a wipe with a shorter duration obviously requires larger inter-frame "steps" of the brush, with the same resulting gaps. Though, you'll see after the next step that the path tweaks easily.

Fine, we've loaded a suitable motion path into the Key Framer filter, a full color brush of our wipe object is active, and our empty layer is selected. Press [Apply to Layer]. (Don't you just love how easy Aura makes this?)

Now for the interesting part: we want to compile our "alpha" layer - our cookie-cutter used to erase progressively one of the video layers.

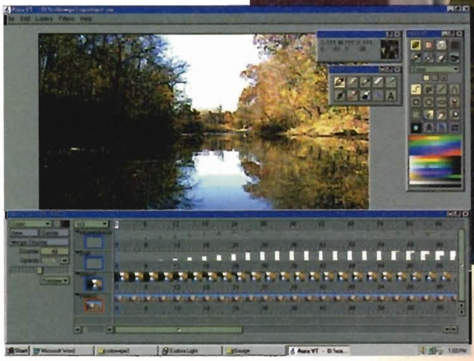
Create a new, empty anim layer, also 180 frames long. Call it "alpha1." Select all frames. Import the brush named "squeegee2.dip." Squeegee2.dip is simply a brush having exactly the same size overall as its predecessor, but lacking the leading portions which caused the undesirable transparency "errors" discussed



KeyTrails requester

The Payoff

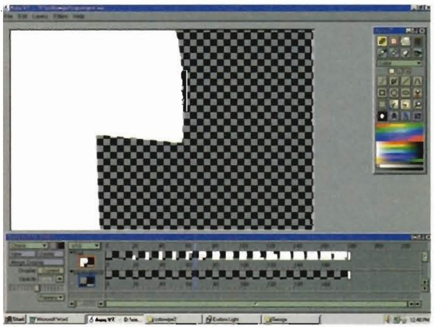
Final Setup



earlier. (See the DIY notes for more detail.) Again, click [Apply to Layer], which lays down a brush sequence with the same path as before. Actually, with a big blocky brush you might be able to skip this step entirely, using a duplicate of the original full color layer for the next step of compiling the trails.

If your object is large and "blocky," you may be able to use the same brush for both the "color" and "alpha" parts of this process. The squeegee is a fairly difficult example, because it has both a negative taper, and a narrow trailing edge.

When required, create the second brush in a separate project. Just load the original wipe object as a new Project rather than an image or brush, which adjusts the working window to the brush size. Create a new image layer above the wipe object layer. Then, use the filled rectangle tool to paint a rectangle the width of the trailing edge - use the color layer in the background as a guide. The wider you make this rectangle the better, but it must not overlap any transparent part of your original brush.



Smoothed "Trails" layer

Change the "Export Mode" to [Deep]. Press [b] on the keyboard (to select the "Brush Cut" function) and use the mouse to drag out a box completely encompassing the working window. Export the new brush (as a Brush) under a different name. (See Second Brush image.)

Whether you're using my squeegee example or a brush of your own, you should now have two similar layers – one (squeegeecolor) that will be our foreground, and the second (alpha1) which we'll now use to compile our "trails" layer. Before proceeding, it might be prudent to save your project.

Happy Trails to Yoouuu ...

Close the Key Framer panel. Select the layer named "alpha1," by clicking on its icon at the left side of the Timeline panel. You now need to run the "KeyTrails.grg" macro. If you like KeyTrails as much as I do, you may want to permanently add it to your George panel (see the Aura manual for details). For now, let's just select George from Aura's [Miscellaneous Filters] list. Click on [Select] in the panel that pops up, navigate the file requester to your George directory, and choose the "KeyTrails.grg" file. (See Misc. George image.)

Click on [Execute Image] in the George panel. The KeyTrails requester will appear - you should choose [Standard] mode for this tutorial. You can play with the others later. Wait a minute or two as the macro does its job. You may use this time to ponder the meaning of life, or take an espresso break if you wish! (See KeyTrails image.)

In a little while, George will hand the controls back to you, after he has created a new layer named "Trails." If you switch the Timeline view mode to [Current] and create a preview, you should see a nice animation of your screen being progressively covered in white "paint." Perfect... almost!

If you look with a critical eye, you may notice some "jaggies" along the edges of the "wipe-in-waiting." To clean that up, select all the frames in the Trails layer, and run Aura's [Smooth] filter with a setting of 3. Smoothing will soften those nasty edges, and doesn't take long. Resave your project and close the George requester. (See Smoothed Trails image.)

You may need to experiment if you are using your own custom wipe objects. As noted above, timing and size have a bearing. If you observe gaps in the "paint coverage" of the last frame, your wipe will not be complete.

You are left with several options: You can modify the path of the brush subtly – this works when the gaps are between swipes in the motion path. The misses occur when the spline paths in the Key Framer are too far apart, or when curves are too tight.

If the gaps appear between successive brush iterations along the motion path, you have too much inter-frame motion for the size of brush. Adjusting the spacing between keyframes, or the overall duration of the wipe, often remedies this symptom.

• • ➤ 23

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MAKING FACES

by
Russ Isler

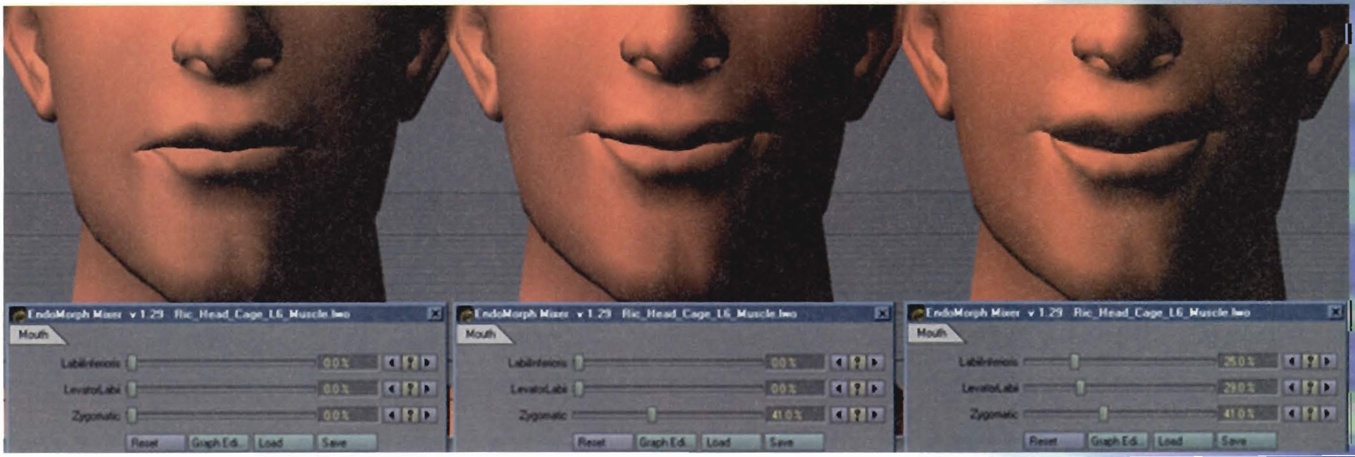
Working on *Roughnecks: The Starship Troopers Chronicles* and *Max Steel*, I have built, targeted and animated many characters in the past couple of years; and I have learned that facial animation is difficult to master. In this tutorial, I will discuss the theories and techniques we employ at Foundation Imaging to plan, model, animate, and breathe life into our character's faces.

Planning

To speak and express themselves, characters need morph targets. But before you begin to model the first polygon, you need to research your character. Will he or she be talking? Shouting? Running for his life? If she is a regular character in the show, you will need to model a mobile face. If your character simply is touting an air freshener in a commercial, then you may be animating only a wrinkle of the nose. You can save valuable time on tight projects by building only the necessary targets.

Knowing your character and the nature of the project helps you decide on the approach to target building. For *Roughnecks* and *Max Steel*, Foundation Imaging's animators followed the "Preston Blair" phoneme method, where you model the basic shapes for speech and then add expressions after. It especially helps streamline the process for time constrained productions. (See the Phonemes.)

With the other major phoneme method, you base the targets directly on individual muscles. This technique can eliminate most duplicate vertex moves, but you need to know what the muscles do to the face before you can animate with them. (See Muscle-based Targets.) For example, to show a "K," you use the Zygomatic Major to widen the mouth, lower the Mandible slightly and lift the upper lip with the Levitor Labii. *Facial Expression* by Gary Faigin provides an excellent reference about facial musculature and how it moves. While written for painters and illustrators, the anatomical information proves invaluable for anyone creating expressive faces in any medium. (You also should study people with sketchbook in hand. Your local

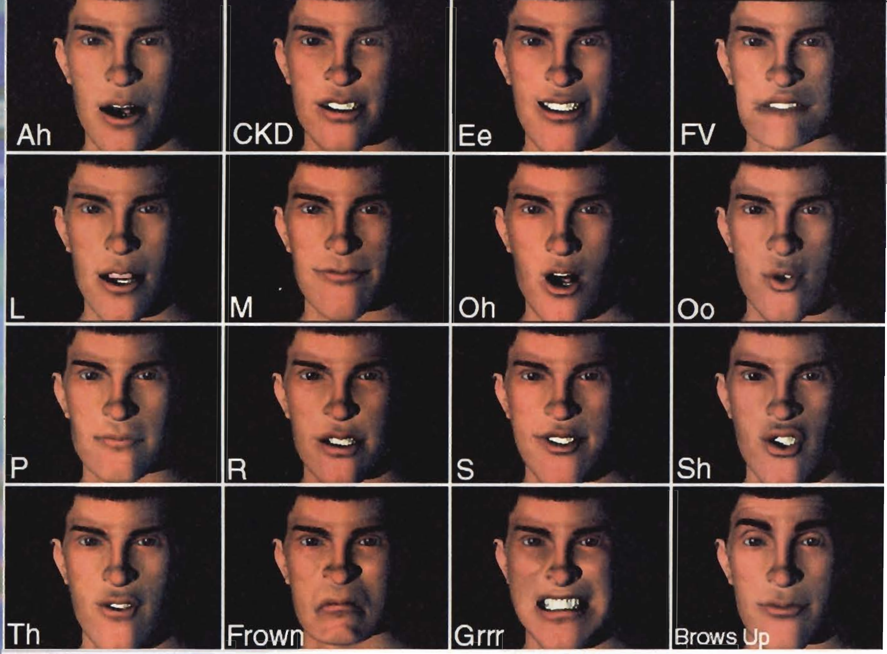


EndoMorph Mixer v 1.29 Ric_Head_Cage_L6_Muscle.lwo
Mouth
LabiiInferioris 0.0%
LevatorLabii 0.0%
Zygomatic 0.0%

EndoMorph Mixer v 1.29 Ric_Head_Cage_L6_Muscle.lwo
Mouth
LabiiInferioris 0.0%
LevatorLabii 0.0%
Zygomatic 41.0%

EndoMorph Mixer v 1.29 Ric_Head_Cage_L6_Muscle.lwo
Mouth
LabiiInferioris 25.0%
LevatorLabii 29.0%
Zygomatic 41.0%

Muscle based targets



Phonemes

coffee shop could serve as an impromptu studio.). For most cases, the muscle-based method leads to targets for the eyelids, brows and mouth (phonemes and expressions).

Modeling

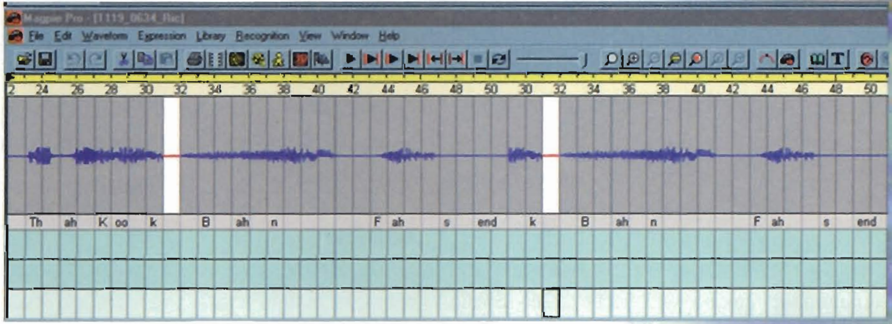
Once you have decided on the number and the style of morph targets, then you are ready to build them. Separating the targets by facial area keeps the complexity down when you are animating. When building the character's base head, keep the polygon count low, but not *too* low. Focus on building facial expression control into the geometry.

Older characters will need more lines of polys in the forehead and around the mouth so they can wrinkle. Make sure you model enough room between the brows and eyelids; so when you lift the eyebrows in surprise, they don't drag on the lids. Also have a clear line of polys across the brow for the eyebrow texture maps. This way, raised eyebrows don't stretch unbelievably.

Create the geometry to follow the layout of the muscles. The major muscles that make the eyes and mouth expressive are rings around those features. If your geometry reflects this, it will respond in a more natural fashion.

To maintain a sense of "solidity" in your character, model the expressions as if a skull lies under the skin. Eyebrows slide over the brow arch, stretching at the bottom slightly. Lips flatten across the teeth, or build up over them in a pucker. The skull's volume never changes, only that of the flesh moving across it. Once again, I stress the importance of observing real faces. People of different ages, races and ages move differently. The proportions and layout of fatty tissue under the surface and the flexibility of the skin change from individual to individual.

The muscles of the face move in curved, arching paths. The skull isn't flat; it's composed of many curves and swells. So, while many animators swear by "Dragnet," (Modeler's Drag and Magnet tool combination), I believe the Vortex tool is king for this process. You should model in all the views. With Vortex, if you set the pivot point so that the face's points are moving across the "skull," you will achieve truly natural looking moves. Also, set the Vortex falloff boxes to mirror the layout of the muscles receiving the effect. (See Vortex Modeling.)



Dope Sheet

The Mandible, or jawbone, is a slightly different case. Here the bone is doing the majority of the pulling. For opened mouth targets, use the Rotate tool on the polys of the jaw line so that they move as a unit from the area of the bone's real life pivot. Then, to round out the lips, use the Drag tool to distribute the stretch of the cheeks across those polys. Now, go back in with Vortex to make an "Oh" or "A" out of the position of the lips.

An often-overlooked detail, the mouth at rest isn't clenched closed. A slight gap exists between the teeth. When the teeth finally do come together for "T" sounds or grimacing expressions, they will have more punch. Also, the upper teeth are locked to the skull, moving only when it does. Refraining from moving the upper teeth during animation prevents your character from looking like they have loose dentures.

Model your targets at the extreme range of the expression. This gives some latitude for the expressions and phonemes. If the character says "Abracadabra," you don't want each "ah" to look identical. Remember that the face is a mass of squishy tissue on top of the skull. In a lot of animation, the face only moves right around the mouth and brows. Most mouth muscles are anchored at the edges of the face. When they move, the cheeks move, the chin flexes and even the ears are tugged. The nose isn't rigid either, the tip is a spongy mass and the nostrils dilate. Across the hard bridge of the nose the skin will wrinkle.

LightWave [6] Specifics

If you have modeled morph targets in a pre LightWave 6 version, they can be converted to Endomorph maps by using the BKG-To-MORF plug-in in Modeler's additional menu. Once a model has Endomorphs, setting it up in Layout is as easy as loading the object, opening Object Properties, switching to Deformations and adding the LW_MorphMixer plug-in to displacements. To arrange the Endomorph targets into groups, remember to name them this way "groupname.targetname." MorphMixer will then sort them automatically when loaded. Double clicking on the Mixer entry opens the plug-in's interface.

MorphMixer allows the graph editor to be open which makes it easier to utilize negative keyframe values when animating. Using a blink in the negative results in a wide-eyed look, which can save you from modeling an extra target or two. Also, because Mixer uses an additive process, redundant vertex moves can "add" up to extreme expressions. Move the upper lip up a little in one target, the same amount in another, blend them to 100% and the lip is twice as high as either of the original targets and rubbing the bottom of the nose! Be subtle when "dialing in" the target percentages.

When you set a keyframe for one target, mixer does not key every target. Since MorphMixer is in permanent "Auto Key" mode, if you so much as click a slider, you have created a key at that frame. The little key icon will appear next to the slider as an indication. The arrows on each side of the key icon will take you to the next or previous frame containing a key for that slider.

Since each target receives its own track in the Graph Editor, plan ahead when keying a given expression. For example, to morph smoothly from "Ah" to "Mm," (from frame 30 to 33), pose the "Ah" at 30% and key "Mm" at 0% at frame 30. Then set "Ah" at 0% and "Mm" at 30% on frame 33. If you don't keep track of what is moving now and what will move at the next keyframe, a lot of overlapping and unintended motion will occur. The Spline interpolation also may add undesired negative values. Keeping the Graph Editor open while you set the keys nips these problems before they pile up.

You Must Remember This...

The eyes lead almost all head movement.

People don't blink at regular intervals. They blink more often when agitated and the blinks themselves are shorter.

Eyes close during head turns.

Eyes shift in darting, quick movements. They rarely stay fixed at one point for more than a second.

Even when looking someone "in the eye," the eyes actually scan their partner's whole face.

MorphMixer is just an interface for the Graph Editor. After keys have been set, deleting the Mixer plug-in from the Deformations slot will not clear that animation. To do that, use the Graph Editor. (To quickly clear an animation, Shift + click all the targets, box select the keys in question and then press Delete.) With more control over the behavior of the keyframes comes more to track while animating.

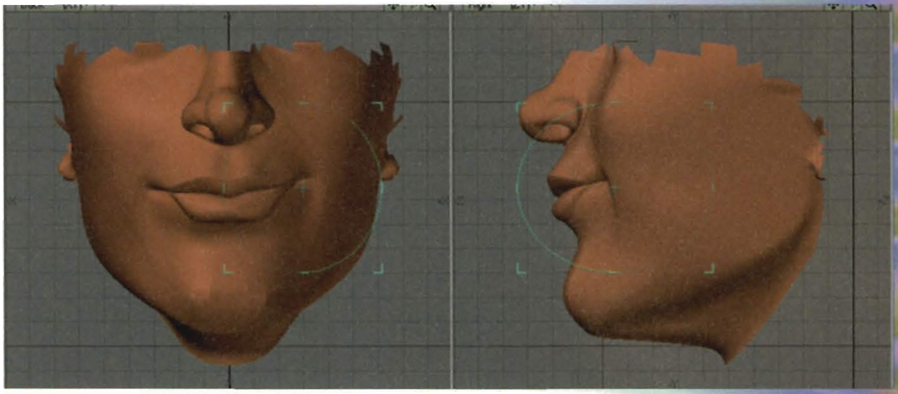
Animating

Whether a cartoon frog or a realistic human, before animating a face, you must know your character. An actor may provide the voice, but you provide the motion, the drive making the animation believable.

When you begin to animate the character's face, think about what kind of person he/she/it is. Crafty? Morose? Terminally ticked off? This knowledge serves as a guideline for what targets will be used the most. In *Roughnecks*, we realized that Lt. Razack's angry phonemes were used a lot more than his happy ones. He shouted a lot.

To organize a scene's speech and expressions, a "dope sheet" generally is employed. This chart breaks down your character's motion frame by frame. In most cases, you'll be working from a soundtrack of the character's dialogue. You can load a sound file into Layout via the Scene Editor, but it does not play back frame accurately when you slide the time bar. However in previews, it does play back in synch.

If possible, acquire video of the actor speaking the lines. Not having this valuable reference material on *Roughnecks*, many of our animators videotaped themselves lip synching the lines they had to animate. That footage loaded up on their PVRs became a video dope sheet. However, not everyone can stay in synch with the dialogue to prevent the slippage of timing.


Vortex Modeling

An alternative is Magpie, (http://thirdwish.simplenet.com/magpro.html), an excellent tool for creating dope sheets. (I don't use its gizmo building or automation features. I've tried them, but I prefer my own hands to set the keyframes.) With Magpie, you can play back a wave file (or AVI) of your dialogue, hear a single frame, and type into the note track what the sound is. Another pass adds notations for blinks, expression changes, and any other facial movements. After logging a scene's dialogue, you can print the Magpie file to serve as your dope sheet. The best part, this technique produces an absolutely frame accurate printout.

When you're logging the dialogue, keep in mind what people's mouths look like when speaking. (For reference, check the videotape of the actors, review your sketchbook or look in the mirror.) Resist the temptation to put a key for every syllable on every frame. This results in choppy looking mouth movements. When people talk, some syllables are "swallowed" by others. The phrase "the quick brown fox" only needs the keyframes illustrated in the dope sheet example. (See Dope Sheet.)

To focus on what animation is needed, notate phonetically what is heard, rather than trying to spell out the actual dialogue. The "Q" is a partial blend of a "C" and an "OO." The "R" in "brown" is lost in the lip's stretching into an "Ah" - the same for the "K" sound of X in "fox."

Space the keys according to the cadence of the person's speech, not on the FPS (frames per second). Usually, keyframes fall every two to three frames with larger gaps up to four to six frames for those drawn out syllables. This means you could have 3 keys right next to each other on frames 10, 11, and 12, but then the next key could be on frame 15. This holds true for animating at 24, 30 or even 15 FPS. The lip synch should "pop," to synch tightly with the dialogue in a lively manner. Otherwise, the character looks like he is eating peanut butter.

M, P, B, T and S's tie the face and the audio together. Holding these consonants an extra frame can add more visual weight. Knowing when to hold a phoneme, and when to have it go straight into another phoneme without an in-between, comes from testing and tweaking. Once the keys are set, use the graph editor to tighten or loosen keys to perfect the timing.

Making a separate pass for each group in the Mixer file, rather than trying to catch everything in the first pass, provides more chances to make sure the lip synch is on target. The brows and eyelids can be animated in turn. Remember, the face is part of the overall body language. Scrub through a scene to match the character's expressions with his actions, especially in scenes where he is not talking. Hide all the other distracting objects, leave the character's skeleton visible, put the head on the lowest subdivision level and set the bounding box limits at the poly count for the head. This provides the quickest refresh of the face possible.

While my focus was on realistic human character building, the information applies to other character styles as well. If you start from here, your characters will speak, shout, laugh, glare and cry in a believable fashion.

Russ Isler is a VFX Animator at Foundation Imaging.
His email address is russ-i@foundation-i.com.

blazing aura

• • 18 ➤

To test for and fix problems of this sort, I usually create the alpha layer first (before the color layer) to assure that the motion works before proceeding. You can tweak your spline paths by simply scrubbing through the frames in the Key Framer window and watching for "misses." Or, make test renders, modifying the path and running KeyTrails several times. Remember to check the last frame in the rendered "Trails" layer – if it's completely obscured, you've got a winner!

Outstanding in Our Field(s)

To finish, import two new video layers of appropriate length. Let's call them "video1" and "video2." If you're using Aura on a New Video Toaster, use one of the "double field" options as discussed in the manual, and again below. Stack video1 above video2, with video2's first frame aligned 180 frames prior to the end of video1. (If you just want to test the wipe, you can use stills stretched to 180 frames, but video1 must be turned into an anim layer.) (See Final Setup image.)

You can delete the alpha1 layer now if you want, now that you are finished with it – but you might want to save both the "smoothed Trails" and color layers even after completing this project. They can be used later to recreate this wipe quickly! Of course, both will need their respective transparency information, so (until Toaster ver.2 gives us RTV files with functional alpha channel) you'll need to save the two layers as 32 bit Targa file sequences.

Switch Aura's mode to [Erase], and drag and drop the smoothed Trails layer icon in the timeline on top of the video1 icon. Now, with squeegeecolor as the top layer, then video1, and finally video2, make a preview. You should see a beautiful (there's no accounting for taste) ersatz "Toaster wipe!" (See The Payoff image)

This wipe is currently six seconds long - yawn. To use with the New Video Toaster or similar NLE system, export it with one of Aura's field options (corresponding to the "double field" option we used when loading the video).

You benefit twice because the wipe is reduced to three seconds and becomes silky smooth! If, on the other hand, you are rendering the wipe for a non video animation, you have a choice. Either simply resize all layers to taste (shorter only, to avoid issues) for a smoother anim. Or, create only 90 frames instead of 180 - however, the smoothness will be compromised.

I have programmed more cool applications in to KeyTrails, so don't be shy about trying those other buttons. Don't be afraid to dabble in George yourself – I am *not* a programmer, but I've had a lot of fun with it. And I have designed some real time savers too! Finally, let me note that the files in this tutorial are all sized for NTSC video resolutions, and may need a little adjustment to serve our PAL friends – mea culpa, and peace – until we meet again.

Steve Bowie is a longtime digital dabbler, enthusiastic LightWaver,
and Toronto's newest authorized NewTek New Video Toaster dealer.
Contact Steve at lightwrx@interlog.com. For other handy George scripts,
go to http://www.interlog.com/~lightwrx.

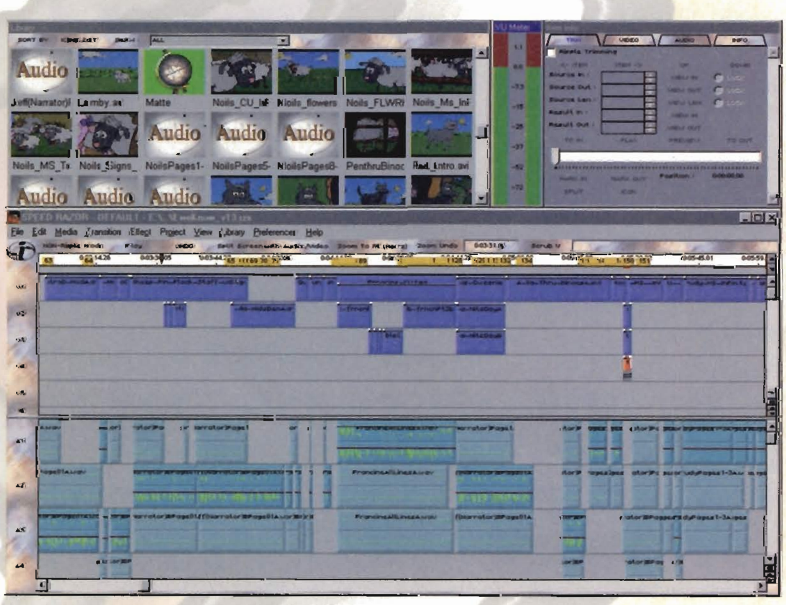
Customizing Speed Razor

Tips and Tricks for Sharper Editing

When we discovered that Charles Meyer was giving demonstrations of Speed Razor at NAB, we asked him to share his editing experience with the readers of *NewTekniques*.

by
Charles Meyer

Greetings, fellow VTNTers, or should I say NVTers, for the New Video Toaster. Before I discuss the "new," roll back the clock to early 1991. NewTek is setting the video industry on its ear with their revolutionary desktop video product, the Video Toaster for the Amiga (now, respectfully re-christened the Classic Video Toaster). In late 1994, NewTek again struck a blow for independence with the Flyer, which to this day remains an NLE (non linear editor) workhorse. Since then, NLEs have become the standard in the video industry. In-sync's Speed Razor, the interface for the NVT, was one of the first NLEs to operate on the Windows NT platform.


Audio
Lamby.avi
Matte
Noils_CU_Inf
Noils_flowers
Noils_FLWR
Noils_Ms_Inf
Noils_MS_Tr
Noils_Signs_
NoilsPages1-
NoilsPages5-
NoilsPages8-
PenthruBinoc
Rad_Intro.avi
File Edit Media Transition Effect Project View Library Preferences Help

When NewTek announced the New Video Toaster at NAB 1999, once again, the video industry was caught off guard. By partnering with in-sync, NewTek found a great match. Together, the NVT and Speed Razor make a winning combination. At NAB 2000, the excitement was palpable. NewTek was wowing crowds - fueled by mass quantities of Krispy Kremes - with a preview of Version 2.0 and in-sync was providing a glimpse of its future, Speed Razor 2000. *NewTekniques* will keep you informed on these developments.

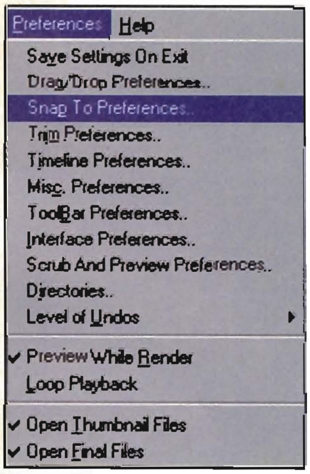
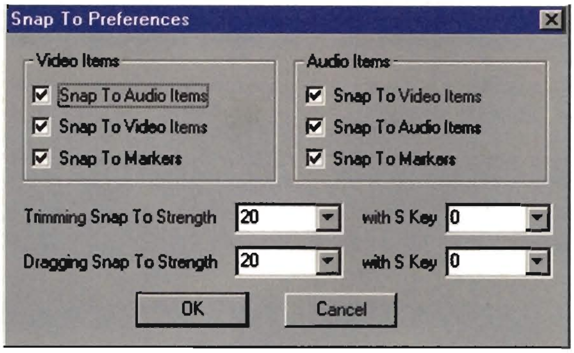

Preferences
Help
Save Settings On Exit
Drag/Drop Preferences..
Snap To Preferences..
Trim Preferences..
Timeline Preferences..
Misc. Preferences..
ToolBar Preferences..
Interface Preferences..
Scrub And Preview Preferences..
Directories..
Level of Undos
✓ Preview While Render
Loop Playback
✓ Open Thumbnail Files
✓ Open Final Files

Figure 1

For this article, I will look at the current Speed Razor interface. Since Speed Razor serves as the front end of the NVT system, we want to maximize its capacity to enhance our editing. As I discuss Speed Razor's interface, I suggest that you follow along on your NVT system.



Snap To Preferences

Video Items
- ☑ Snap To Audio Items
- ☑ Snap To Video Items
- ☑ Snap To Markers

Audio Items
- ☑ Snap To Video Items
- ☑ Snap To Audio Items
- ☑ Snap To Markers

Trimming Snap To Strength: 20 — with S Key: 0

Dragging Snap To Strength: 20 — with S Key: 0

Figure 2

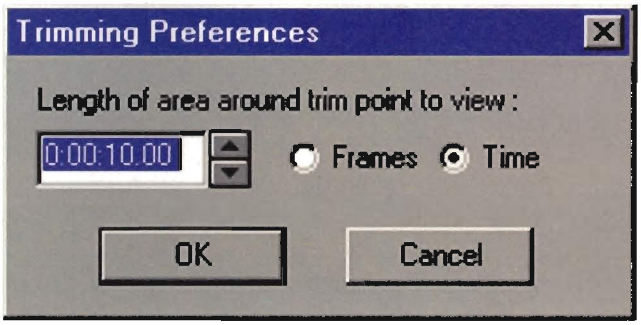
If you have edited on an Avid or with Premiere, Speed Razor may appear strange when you first open it. For Video Toaster Flyer veterans, one look at the Speed Razor interface and you know that you are no longer in Kansas. Although, as an editor, I like Speed Razor's customizable interface. By adjusting the windows and setting preferences, you can fine tune Speed Razor to be more responsive to your editing style.

Upon opening Speed Razor, the volume of windows may shock you. The primary set includes your Library, Item Info, and Composition or Timeline windows. The secondary ones are the VU Meters, Source 1 & 2, Result, and Playback windows. They can all be squeezed, stretched and positioned. For example, if you hold down the [Shift] + the [right mouse button] and move the mouse in an empty area on the timeline, you can change the height of the layers in either the audio or video sections. As you use Speed Razor more, you will settle on a comfortable orientation.

Also, I find Speed Razor and NVT's dual monitor support indispensable because in the editing world, you always need more real estate. When using an NVT system on two monitors, you can display Toaster Vision on one of the screens, where you can watch your edited work in full uncompressed splendor without the need for a broadcast monitor. However, I still suggest that you use a broadcast monitor - especially if you don't want your clients looking over your shoulder.

After you have laid out your windows on those dual 21" monitors, it's time to tweak Speed Razor's settings. As an editor on Speed Razor systems for over four years, I can say that adjusting the preference settings is key to honing your editing on your NVT system.

We will start with the Snap to Preferences, one of the most overlooked options. Go to the composition window toolbar and click on [Preferences] and select [Snap to Preferences] from the pull down menu. (Figure 1) A dialog box will open. (Figure 2) I select the video and audio items to snap to all the options. In the lower half of the dialog box, you input numbers that represent tick marks on the timeline. I set the two "Snap to Strength" values to 20. Now, when I drag a media clip around the timeline and the clip gets within 20 tick marks of the next video, audio or marker, the clip will automatically snap to it.

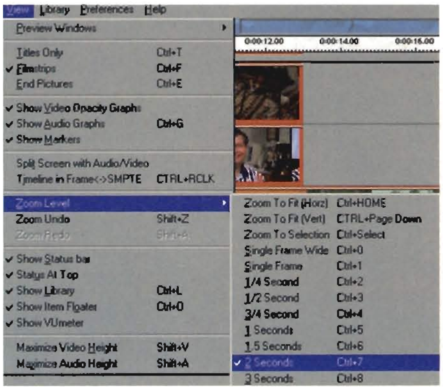


Trimming Preferences

Length of area around trim point to view : 0:00:10.00 — ○ Frames ● Time

Figure 4

For the "with S key" values, I enter 0 and 0. With these settings, you can hold down the [S] key while moving clips or trimming and they will not snap to anything. This "no snap" feature gives you more control when you are aligning clips. (Jamie Carr from in-sync has suggested that NVT users running version 4.8SE may wish to change the 0 to 1. He stated that it cures the small gaps that some 4.8SE are experiencing.)



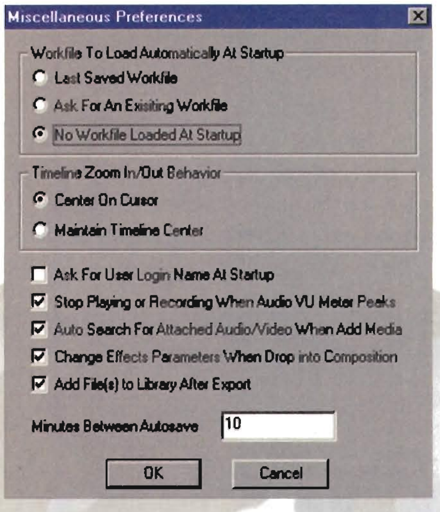
View
Library
Preferences
Help
Preview Windows
Titles Only Ctrl+T
✓ Filmstrips Ctrl+F
End Pictures Ctrl+E
✓ Show Video Opacity Graphs
✓ Show Audio Graphs Ctrl+G
✓ Show Markers
Split Screen with Audio/Video
Timeline in Frame<->SMPTE CTRL+RCLK
Zoom Level
Zoom Undo Shift+Z
Zoom Redo Shift+A
✓ Show Status bar
✓ Status At Top
✓ Show Library Ctrl+L
✓ Show Item Floater Ctrl+O
✓ Show VUmeter
Maximize Video Height Shift+V
Maximize Audio Height Shift+A
0:00:12.00
0:00:14.00
0:00:16.00
Zoom To Fit (Horz) Ctrl+HOME
Zoom To Fit (Vert) CTRL+Page Down
Zoom To Selection Ctrl+Select
Single Frame Wide Ctrl+0
Single Frame Ctrl+1
1/4 Second Ctrl+2
1/2 Second Ctrl+3
3/4 Second Ctrl+4
1 Seconds Ctrl+5
1.5 Seconds Ctrl+6
✓ 2 Seconds Ctrl+7
3 Seconds Ctrl+8

Figure 3

Here's another tip for people who are moving clips and the clips are snapping on the wrong side. Picture the media clip in halves, whether video or audio. When you move a clip, the half that you grab becomes the controlling side; the other half is passive. For example, put two video clips on the timeline with a ten-second space between them. Now, take a five-second clip and place it on the timeline between the two. Hit [CTRL] + [7] to adjust the zoom in factor of the timeline. If you grab the five-second clip on the right half and push it to the left, the clip does not snap to the adjacent clip, even though you have selected the "snap to" option in your preference settings. The left side has become passive. If you move the clip to the right, it will snap to the next closest clip on the right within 20 tick marks. When you hold down the [S] key, you can grab either side and move wherever you want and it does not disrupt the rest of the project.

To move around the timeline more quickly, try this tip. To begin, click [CTRL] + [HOME] to see the whole project. To zoom quickly into a specific area, hold down the [CTRL] key and mark the area in the composition window with your mouse. The timeline will zoom into that area. Also, learn your Zoom Level hotkeys. (Figure 3)

Back to the preference settings, this time we'll adjust Trim Preferences. (I find this to be a funny name for the function since it really has nothing to do with how someone may be trimming media clips in a given project.) Select the [Preferences] tab and choose [Trim Preferences] and enter 10 seconds. (Figure 4) Close the dialog box. Now, move your cursor anywhere on the timeline and hit [ENTER].


Miscellaneous Preferences

Workfile To Load Automatically At Startup
○ Last Saved Workfile
○ Ask For An Existing Workfile
● No Workfile Loaded At Startup

Timeline Zoom In/Out Behavior
● Center On Cursor
○ Maintain Timeline Center

☐ Ask For User Login Name At Startup
☑ Stop Playing or Recording When Audio VU Meter Peaks
☑ Auto Search For Attached Audio/Video When Add Media
☑ Change Effects Parameters When Drop into Composition
☑ Add File(s) to Library After Export

Minutes Between Autosave 10

Figure 5

The program automatically will play five seconds before and five seconds after that cursor location. For all the old linear editors, it's reminiscent of pre and post rolls. Again, you can adjust this setting, but ten seconds gives a good feel of an area without being too long.

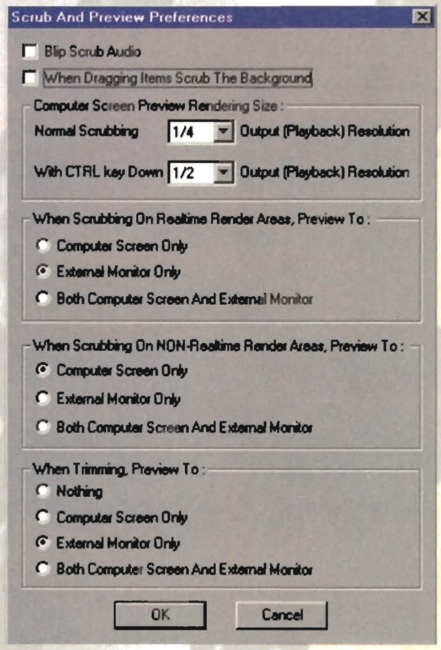
Next, click [Preferences] and select [Misc. Preferences]. (Figure 5) The "Minutes Between Autosave" should be set to around 10 or 15 minutes. If the number is 1, the system spends more time saving the project and slows the performance of the application. At our editing facility, we have a multitude of clients, and they do not need to know who the other clients are. So our systems are set to "No Workfile Loaded At Startup." Also, select "Center On Cursor." With this chosen, no matter where you place the cursor on the timeline or what the zoom factor is, the cursor will always be at the center of your timeline.

Selecting the proper settings in the Scrub/Preview Preference box can dramatically improve your editing efficiency. In the current version of the NVT, you need to render your effects. You could edit more quickly if you could see those layers as you work on them, and get a feel for the result. The Scrub/Preview settings control the visibility of those layers.

Before I discuss this dialog box, one caveat: a good graphics card in your system is essential. You are pushing the media files through the graphics card to your computer monitor in what is called "software realtime." The better the graphics card, the better the system responds, and your resolution will be higher in the secondary windows.

As an example, put a video clip on V1. Then put another clip on V2 and an effect on V3, such as a color correction or 2D DVE. You will see, via software realtime, the effect on the computer monitor. You still have to render it; but you may only have to render it once to get it right, instead of three or four times. During procedures like these, secondary windows become important.

If we look at the dialog box of Scrub/Preview, "Normal Scrubbing" should be set to 1/4 and "With CTRL key Down" should be set to 1/2 or 1/1. (Figure 6) The three options below those can be set to External, Computer, and External, accordingly. Now, as you scrub through an area that needs to be rendered, the system will show it at 1/4 of full resolution. When [CTRL] is held down, the resolution will expand to 1/2 or full, depending on the value you entered. Your results may vary; but at work, we have scrubbed through four layers of video, at 1/4 resolution, with two effects attached to each video clip. Also, with the last setting at external monitor, you can see all the trimming you are doing on the screen. I prefer this orientation when trimming clips, whether in the Item Info Window or the Composition Window.


Scrub And Preview Preferences

☐ Blip Scrub Audio
☐ When Dragging Items Scrub The Background

Computer Screen Preview Rendering Size :
Normal Scrubbing 1/4 Output (Playback) Resolution
With CTRL key Down 1/2 Output (Playback) Resolution

When Scrubbing On Realtime Render Areas, Preview To :
○ Computer Screen Only
● External Monitor Only
○ Both Computer Screen And External Monitor

When Scrubbing On NON-Realtime Render Areas, Preview To :
● Computer Screen Only
○ External Monitor Only
○ Both Computer Screen And External Monitor

When Trimming, Preview To :
○ Nothing
○ Computer Screen Only
● External Monitor Only
○ Both Computer Screen And External Monitor

Figure 6

Now that you have adjusted your preferences and customized your interface, you will want to retain that setup for all your projects.

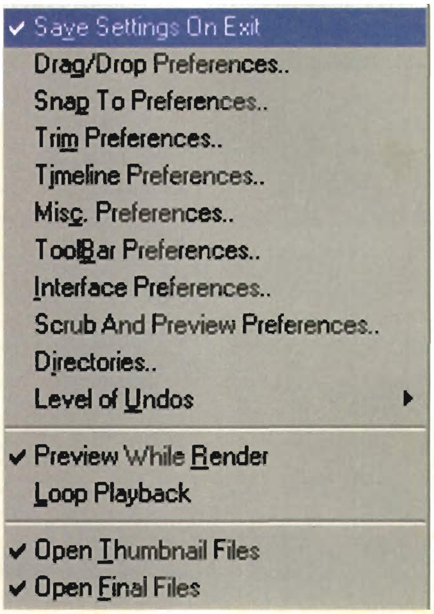
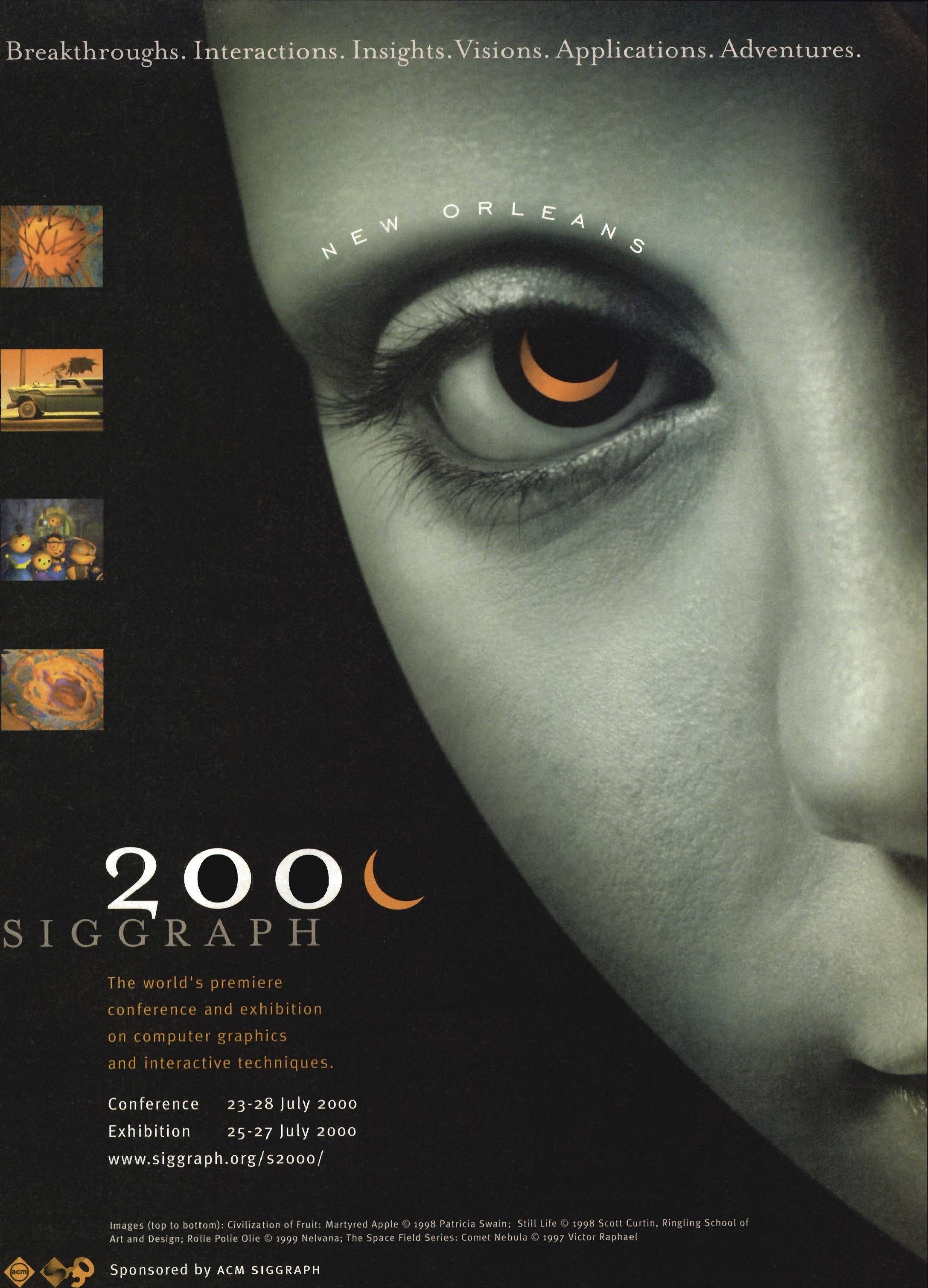


Figure 6

Click [File], select [Start a New Project] and name it "Default." Your system automatically will create a project folder named "Default" and will save the project as "Default_0." Make sure that you have [Save Settings on Exit] checked in the Preference settings. (Figure 7) Close Speed Razor. Open Speed Razor again. It will ask you what project you want to load. Load "Default_0" project. Now, turn off the [Save Settings on Exit] function, save over "Default_0," and again close the system. When you start Speed Razor a third time, don't open a project. Instead, start a new project by selecting that option in the File Menu. (Do not turn [Save Settings on Exit] back on unless you want to change either the Preference Settings or your interface's window layout.) That's it. In the next issue, I will give you more tips and tricks. Until we meet again, keep editing.

Charles Meyer's most recent projects are two cartoon shows, Willard and Ewe Know that will be released this summer direct to video. His email address is charles@triadcommunications.com.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The DC1000 is a complete, frame accurate video editing solution using state-of-the-art real time dual stream MPEG-2 technology. DC1000 is bundled with Premiere RT5.1, TitleDeko, ACID Music, and Minerva Impression CD-Pro video authoring. It is designed for videotape, CD-ROM, and Internet video production. The DC1000 can be upgraded to DVD1000..................Call

DV Option for DC1000 – Record and edit MPEG-2 video. Use captured video in LightWave and record your own animation back to tape ....Call

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dvguide.sharbor.com/dc1000/

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Visual Inspirations

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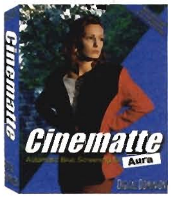

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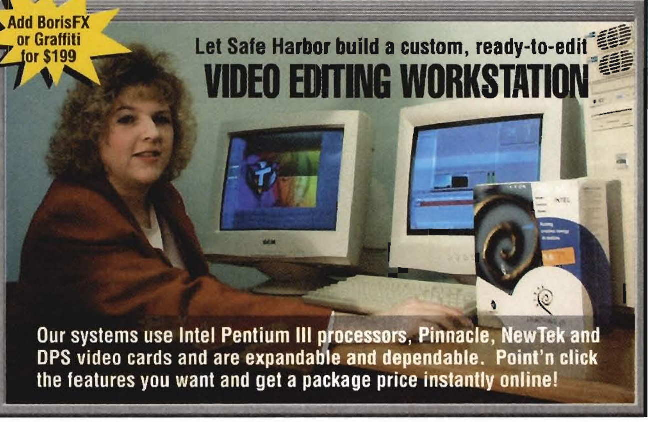

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Web #108

Toast Master FlyingHigh

TAKING STOCK OF CANNED FOOTAGE

by
Bohuš Blahut

Today, companies marketing stock footage offer a wide variety of content and prices. Whether original or culled from Hollywood productions, the daunting volumes of material require time and patience to sift through and sort out. The following reviews of several outstanding collections should streamline your chore.

MotionCLIPS
digital sequence library

Many of these CDs are aimed at the PC/Mac editing juggernaut, so they use PC/Mac formats. While conversion to the FlyerClip format can be tedious, your effort will be rewarded. The resulting footage is so beautiful and professional, you will reel over your own work.

And yes, all of the packages surveyed below are royalty free, meaning that you receive a license to use the clips. One other note, all prices listed in the article are subject to change.

Motion Clips

Let's start with one of the best. Stored on a single CD-ROM as JPEG sequences, the scenes include a wide variety of material mostly shot on video.

For no other reason, buy it for the time-lapse clouds. Clients go ga-ga when they see them behind their logo. The package also contains a few retro film clips, some nature clips of a brook with a fisherman, and even underwater footage of some trout. On a recent project, my client wanted to tout his environmentalism. I hadn't shot any footage at the factory that I could use; and neither time nor money allowed for a shoot. I simply grabbed some nature clips, added a spinning Earth from LightWave, and did a little multi-layered compositing using the recycling logo as the motif. Sweet!

The files are JPEG compressed and are 752x480 - the same size as a video frame in the Flyer and other NLEs (non-linear editors). While not designed to be loopable, abstracts such as the time-lapse clip of clouds can be repeated with a slow dissolve.

A number of strange clips are found on the CD, including several clay animation shots of a rooster leading an all animal band. (The creators also offer custom animation.) Finally, the package contains several directories of still graphics for text and animation backgrounds; they range from conservative to abstract to bizarre.

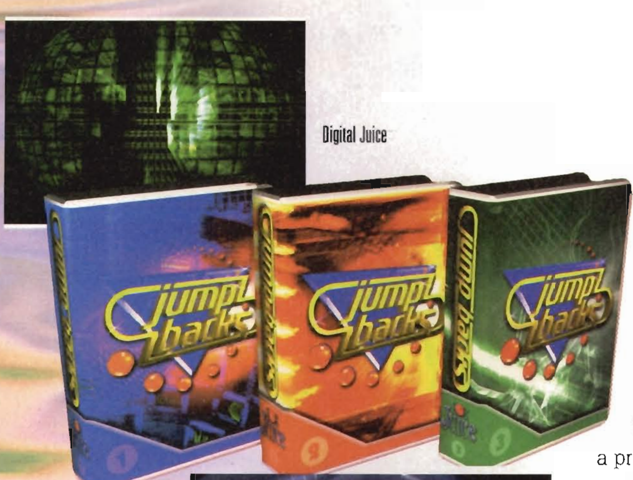
Go to www.accadia.com/motion to learn more and to order the disc. At $59.95 it's versatile and it's a bargain.

Digital Juice

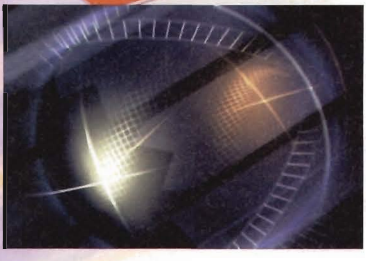
The folks who serve the Juice originated Club Toaster. You may remember when the Club delivered new content every month to Toaster and Flyer owners, mostly LightWave generated animations designed to play back unobtrusively behind text. In the third and fourth years of Club Toaster, the quality improved dramatically.

Club Toaster, under their new moniker Digital Juice, continues to provide collections of superior animated backgrounds. Their latest, a three volume set called "Jump Backs," out shines broadcast graphics, allowing small studios to become more competitive. The networks will have to work harder to keep up with the cool Jump Backs.

Since the Jump Backs collections have a very strong sense of design, (both its weakness and its strength), each



Digital Juice



user should try to customize the clips to achieve a distinct in-house style.

You'll find many choices, from ghostly and ethereal abstract backgrounds, to realistic images and animations, which will enhance whatever is placed in front of them. The animations all loop - and the loops are long but seamless.

Rest assured that you are buying good stuff. DJ Clips are used on several national TV shows like *Jenny Jones* and the *Grammy Awards*. In my own studio, we use them in every project - even the lowest budget ones. This collection makes it easy to liven up projects at every level, and every customer leaves thinking that they received a bargain.

I do have two complaints. First, the backgrounds are labeled numerically. I'd prefer to change "Jump Back 37" to "techno coliseum" or something I could remember. As my clip collection grows, I am better off recalling names than numbers. Also I'd like to see a few examples of the Jump Backs in action, even a few screens of CG titles - something to stimulate our creative digital juices.

The JumpBacks come with special binders that hold the CDs, a full color reference booklet, and a VHS video of all of the backgrounds so that you don't have to load them into your NLE to view them.

Each of the three volumes contains 5 CDs of JPEG compressed images, 720 x 486. Also included is a utility for the speedy conversion of the JPEG's into Avid or other common NLE formats.

In the three volumes, three clips were repeated in Club Toaster Year 4, but I don't think that detracts from the overall value. I don't mind a few near clones because I can use them to develop a motif in a project.

For faithful Toaster & Flyer editors, Club Toaster Year 5 may be released - good news for those who would rather not hassle with converting to the FlyerClip format. If you cannot wait for that release, clips are available on videotape. Each volume sells for $249, with price incentives to buy all three.

You can learn more about the collections at www.digitaljuice.com. You can also call 352-368-2115 to receive a free demo video of the collection.

Prismo

A new kid on the block, Prismo, epitomizes "bang for the buck". When you open the box, you'll see what looks like eight CDs (it's actually 14) and a plastic egg with Silly Putty in it. Silly Putty? When I asked them about it, they said that their collection is a lot like "video silly putty." You can bend it, shape it, then ball it up and try something new. An appropriate gimmick.

The CDs contain finished elements and backgrounds, as well as numerous animations intended to key on top of other material. Think of it as slices to pile up on a creative sandwich. How was it? Yummy.

The 473 animations come with several references: each disc is accompanied by a printed booklet, a preview QuickTime, a browser CD that catalogs the entire collection, and a heavily indexed website. All extremely useful.

Three discs are themed collections. (1) "TimeWarps" contains fly-throughs in various environments like star fields, fractal clouds, and grids - more than 40 animations here.

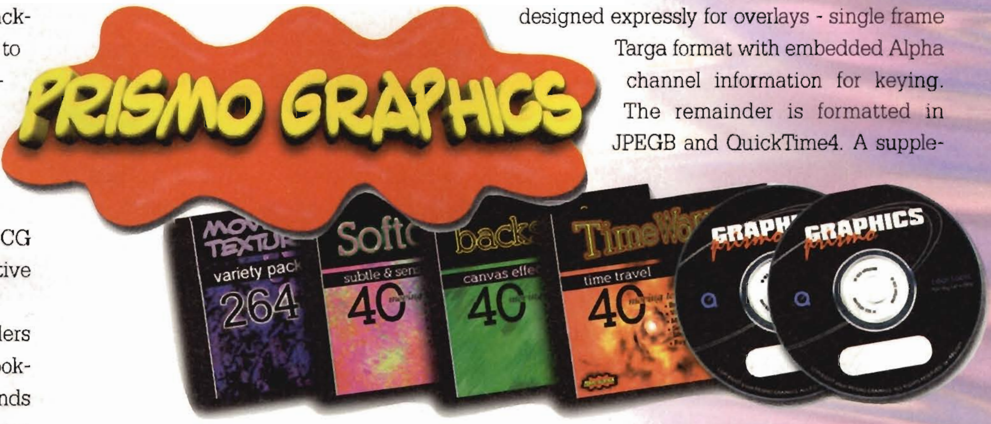
(2) "BackStrokes" is a collection of painterly backgrounds with very naturalistic textures. For wedding guys, it's pastel heaven. The artistic textures evolve very slowly and subtly - some are almost imperceptible. (While the CD says 40 animations, there are actually 44.)

(3) "SoftDrops" are 43 delicate, slow-moving rippling backgrounds. They resemble water or cloth, but with vivid colors impossible to capture on video. They range from subtle pastels to incredible psychedelia. A surprisingly versatile collection.

A six disc set, "264 Moving Textures," contains a grab bag including smoke, clouds, ripple effects, particle animations with alpha channels for keying, and blobby eruptions for all of your gloppy needs.

Thirty-two sequences on these discs are designed expressly for overlays - single frame Targa format with embedded Alpha channel information for keying. The remainder is formatted in JPEGB and QuickTime4. A supplementary disc includes the overlay animations in QuickTime format with alpha channel (in case your compositing application doesn't support Targa sequences).

On the six disc set, you'll find a few clips with more specific uses: geometric back-



ArtBeats

ARTBEATS
DIGITAL FILM LIBRARY

grounds for composing text, lots of thick slow ripples in all the colors of the rainbow, caustic effects, and textures to use behind video footage, or with a LightWave model.

The bonus CDs are a good grab bag in their own right. "Textural Highlighters & Chrome Maps" is a collection of additional textured animations: sequences of fire and explosions to composite in scenes, and chrome-looking plaques with glinting lights just waiting for your text.

With "Active Frames," you can animate borders around anything. Don't stop at just framing text. You could fly in one of these animated frames around any video that needs spicing up - or you could use them to cut from the studio to "man-in-the-street" interviews - just like the networks do. The QuickTime animations range from pretty, to abstract, to downright pyrotechnical. (For single still frames, look elsewhere.)

This huge collection offers LightWave users outstanding flexible sequences that can be applied to a text face or a graphic board. (Unfortunately, Toaster CG isn't compatible.) The clips loop seamlessly. However, a word of warning, keep your text simple and legible.

I do have some reservations: their compression schemes for the CD clips are *so* cutting edge, and often too complicated to use. JPEGB is a new incarnation of JPEG, and is vastly superior to the original. But since not every NLE supports it, I wish that Prismo had stuck to the established JPEG system that accommodates older NLEs. Likewise, QuickTime is not universally useable although it saves space and preserves quality.

I have two more practical requests: I wish the Browser CD would auto start; and I want custom browsing software instead of a snapshot of the website.

Prismo represents an excellent amalgam of work from an experienced company. Part stock footage and part stock elements for you to assemble, it's a great idea. More collections like Prismo's will come along in the future - but who wants to wait for the rest of the world to catch up?

The three backdrop CDs cost $169 each, and the big kahuna, "264 moving textures," fetches $199. For a limited time, there is a special promotion to get all of these discs for $299 - with bonus CDs with extra animation, alpha channels, and way too much stuff to list. You're looking at a full 720 x 486 of creative stock elements to bend and mold as you see fit. Point your browser to www.prismo.com. You can also call 1-888-453-5454 to request a free browser CD.

ArtBeats

This company sets the standard for stock film on CD-ROM with terrific reference material covering many broad categories. They have traveled the world shooting with 35mm and 16mm film. In addition to pristine pictures and compelling imagery, the discs are well indexed and organized. The library uses QuickTime to compress the clips onto the discs.

While the CDs seem expensive to the smaller studio, remember, you are buying professionally shot footage already composed, lit, and in the can. You achieve the professional look of expensive studios with nothing more than a mouse click. You can create commercials from the digital film library and never lay a hand on your camera.

ArtBeats sells a Starter Kit with two CDs for $39.00. You receive six clips and a big fat binder with pages of thumbnail images from all of the CDs. The CD prices range from $199 to $499. For an extra charge, they are available in HD format. You can order specific clips from the website - great for late night edits when you need that "perfect" shot. Also at www.artbeats.com, you can download previews of all the footage and receive a free clip to get you started. Call (800) 444-9392 for more information or to order.

PyroMania Classics

Early on, Visual Concepts Entertainment (VCE) set the standard for pyrotechnic visual effects in blockbuster films, including *Star Wars*, *RoboCop*, and *Starship Troopers*. Then, VCE pioneered the effects resale business by marketing CD-ROMs containing their trend-setting fire, explosions, and other mayhem.

The film industry has the money to blow on special effects. In fact, the first VCE disc I bought listed the cost of the shots. For the price of the CD, you obtain tens of thousands of dollars worth of Hollywood effects.

Movie Effects Studio
PYROMANIA!
AMIGA
Pyromania
vce

PyroMania Classics

DiscreetFX has combined PyroMania volumes 1 & 2 to create this collection. One disc contains mostly explosions and fireballs, but also includes useful fire wipes already converted into the Toaster Flyer's native FlyerClip format, and several unique switcher effects.

Serious compositors will be happy that the sequences are available as separate IFF images with alpha channels. Also, DiscreetFX has compiled various sequences into ANIM format.

EyeWire Images
VIDEO COOL CHARACTERS

EyeWire

The two CD set retails for $199 from your local dealer, or you can call Discreet FX at 312.861.7894 or email billpanagouleas@netzero.com. You can also see several examples from this collection on Nova Design's Millennium upgrade for the Video Toaster.

EyeWire

A newer entry in the stock footage scene, Eyewire sources on film. Instead of offering yet another collection of explosions and rivers, EyeWire has created unusual niche material.

Originally, EyeWire provided stock images and fonts to computer graphic designers. A few years ago, they added film footage and surprised many editors with their quality and aesthetics.

Each volume contains a pair of CDs and a booklet. In the latter, you'll find printed thumbnails of all of the clips on the disc. Slip the disc into your PC or Mac and choose between QuickTime or full screen previews. Here's a quick look at a few of my favorites:

Edit Effects 1 & 2 give you all kinds of technological burps and blasts to edit into your MTV-paced productions.

Cool Characters is a library of filmed folks in costume that you can drop into any footage using the included alpha mattes.

Health & Fitness uses dramatic low-key lighting to show off the fit physiques of male and female models.

Cyber Technology peers into our techno world in ways we've never seen before - dramatic close-ups and rack focus effects showcasing common icons of technology.

The clips are all full broadcast standard and QuickTime compressed. Most of the library costs $349 per disc (slightly more for PAL).

You can request a printed catalog by going to their website at http://www.eyewire.com/ products/footage or by calling 800.661.9410. You can also check out preview clips while on the web.

Millennium

The most recent upgrade to the Video Toaster is Nova Design's Millennium package. While easy to focus on the software included in this 3 CD set, the discs include stock footage clips - the majority of which are unavailable anywhere else, including new stuff from the creative team at Club Toaster and Digital Juice. Additional footage originates from demo clips from some of the collections previously mentioned. All the footage is in Flyer format.

The clips alone are worth the price of the upgrade, and you get so much more aimed squarely at the Video Toaster and Flyer editor.

MILLENNIUM
Nova Design, Inc. Production For NewTek's Amiga Video Toaster and F

Millennium

Contact your local Amiga dealer, or you can call Nova Design at 1.800.IMAGE69 or check out their website at www.novadesign.com.

If you decide to stock your studio with clips, heed these tips:

Remember to pay attention to the format and size of the images. Some really inexpensive stock footage is sized at 640x480 - great for multimedia playback, but not quite big enough for video.

Make sure that you can handle the clips' format. If it's JPEG sequences, you should be fine. However newer versions of JPEG will not load into your Flyer. If the clips are in QuickTime formats, you definitely will need a PC or Mac to convert.

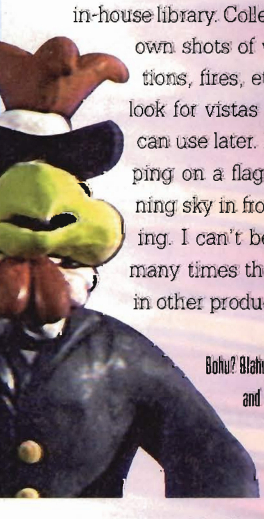
If you have a PC or MAC NLE, don't be afraid to use it to load clips, then simply play them right into your Flyer. Will there be image degradation? Probably. Will anyone care? Probably not.

You can order many of the stock CD collections on high quality video. The advantages are speed and compatibility; but since videos aren't as sturdy as CDs, they will wear over time.

Be careful when combining video and film stock footage. Since the texture of each medium is so different, you'll want to bunch the similar sourced material together. I often use film in introductory sequences - an established aesthetic on American TV. If you need to cut to or from film, try a "distraction" such as a still graphic, or a motion controlled shot of a photo.

Browse the Internet and experiment with free samples.

Finally, always continue to build your own in-house library. Collect and organize your own shots of water, tourist attractions, fires, etc. On jobs, I always look for vistas and scenarios that I can use later. I shot Old Glory flapping on a flagpole against a stunning sky in front of a client's building. I can't begin to tell you how many times that clip has appeared in other productions.



Bohus Blahut is the director of The Vantage Point and the creator of the Catalyzer tutorial video series. You can email him at bohus@xnet.com

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QUICK DIAL 74

SONY

DCR-VX1000

3-CCD Digital Camcorder

B&H SPECIAL
$2795

The DCR-VX1000 records 500 lines of horizontal resolution, and has a higher S/N ratio than cameras costing ten times more. Also records audio digitally, using PCM technology, the same as used in CDs for a breathtaking dynamic range of 96 dB. Most important though, since video and audio signals are recorded digitally, you can copy or edit multiple generations with no loss in quality. Analog tape artifacts like color bleeding, dropouts and generation loss are all a thing of the past.

- Eight-speed 10X optical zoom lens goes from 5.9 to 59mm in 4.1- 20 secs. Also provides a digital 20X zoom.
- Records 12-bit/32kHz audio with two pairs of stereo tracks.
- Automatic and manual audio level record controls.
- Built-in time base corrector (TBC) delivers jitter-free playback and dead-perfect stills.
- Digital effects include audio and video fade (to black), overlap and slow shutter • Time-lapse recording
- Sony's Super SteadyShot reduces high frequency camera shake without compromising image quality.
- Records "extended data codes". Automatically stores date/time, shutter speed, iris and other data for easy recall.

Panasonic AG-EZ30

3-CCD DV Camcorder

The AG-EZ30 combines 3-CCDs and the DV format to deliver a level of picture and sound quality that makes it one of the most advanced camcorders of its kind. Weighing just 1.5 lbs. this incredibly lightweight camcorder also incorporates a large 2.5-inch color LCD monitor and has a host of sophisticated auto functions as well full manual control when required.

- 3-CCDs (270,000 pixels each) with a large light-collecting area give the camera high sensitivity and wide dynamic range. Double-density pixel distribution and a gapless dichroic prism further ensure razor-sharp images and extremely faithful color reproduction.
- Selectable 2-channel 48 kHz/16-bit or 4-channel 32 kHz/12-bit PCM audio recording.
- Built-in stereo mic and external mic input as well.
- 180k pixel, 2.5-inch color LCD monitor and a 0.5" color VF
- Digital Image Stabilizer for clear, shake and jitter free shots.
- 12X optical zoom as well as 30X and 120X digital zoom functions. Move from wide-angle to full zoom in 1.3 seconds allowing quick framing while in REC pause.
- Offers six digital effects: Wipe, Mix, Strobe, Gain-Up, B&W and still mode.
- Five program AE modes for shooting in a variety of different conditions. There is also a five-mode white balance: Set , Fluroescent, Auto, Indoor and Outdoor.

Canon

XL-1 3-CCD Camcorder with Interchangeable Lens Mount

With 3-CCDs, exclusive interchangeable XL Lens Mount System, unmatched optical technology, SuperRange Image Stabilizer, DV and simultaneous four channel audio recording, the XL-1 offers unmatched image quality and shooting versatility.

Interchangeable XL Lens Mount System

- Interchangeable XL lenses for unsurpassed flexibility and multi-coated optics to achieve 600 lines of resolution.

16:1 Optical Zoom with SuperRange Image Stabilizer

- The 16:1 has a focal length range of 5.5 to 88mm (35mm equivalent of 39 to 633mm). It offers variable speed zoom, manual zoom and manual focus control and has a one-push auto-focus button and built-in 1.5X ND filter.
- The SuperRange Optical Image Stabilizer uses a motion vector to examine the image after it is received by the CCD to detect any shake.

Digital Audio

- Three digital audio modes (16 bit and two 12 bit modes) and simultaneous recording of four separate tracks. You can output each signal independently.
- Audio inputs with independent level controls.

3-CCDs

- Three 270,000 pixel CCDs with advanced Pixel Shift technology achieves 530 lines of resolution.
- Large 72 micron CCDs deliver a 4dB improvement in sensitivity.

Three Recording Modes:

Unique Design & Dual Action Carrying Handle

Additional Features:

- 180,000-pixel color viewfinder
- Automatic and manual white balance, gain (five preset levels from -3 to +12dB) and exposure lock.
- Zebra pattern and color bar generator
- Composite, S-Video output, DV (IEEE 1394) in/out, Control L
- Digital fader and wide screen TV effect
- Headphone jack with level adjustment
- Remote control with jog/shuttle dial

GL-1 The First Digital Video (DV) Camcorder with PRO L-Series Fluorite 20X Zoom Lens

Building on the company's design heritage in professional 35mm photographic and broadcast TV lenses, the GL1 is equipped with Canon's exclusive L-Series Fluorite 20X optical zoom lens and 3 CCD image sensors, offering outstanding imaging power in a lightweight, portable design. In addition the GL1 also incorporates the world's first 20X optical zoom. With the cameras ability to extend to a 100X digital zoom, users can increase magnification too distant to be seen with the eye alone. Encompassing the design characteristics of a consumer camcorder with its compact size and 2.5" flexible LCD view screen, color viewfinder, the GL1 is also equipped with much of the same functionality that attracts newscasters and independent filmmakers. By extending broadcast-quality DV technology to prosumers, Canon is bringing high-quality video production capabilities to homes and small businesses. For users interested in visual computing, this FireWire IEEE 1394 compatible camcorder is ideal for producing QuickTime movies and creating images for distribution via the Internet. FireWire is one of the fastest peripheral standards in the DV industry, offering 30 times more bandwidth than USB, allowing for high-speed desktop video editing and display.

- Professional L-Series Fluorite Lens - a material that provides outstanding resolution, contrast and color reproduction and minimizes color aberration, especially in high-magnification lenses.
- 20X Optical Zoom - At a 35mm focal length equivalent of 40 - 806mm, the 20X optical zoom transforms distant subjects into, dramatic close-ups.
- 100X Digital Zoom - capable of extending between 40X - 100X. At full telephoto, 35mm focal equiv. is 80-600mm.
- Optional WD-58 Wide-converter - will increase by 0.7X, 28mm in 35mm focal equivalent, for indoor shots or panoramic views.
- Optical Image Stabilization - eliminates image shake due to a wide range of movement and/or high wind conditions.
- Three Shooting Modes -Frame Movie mode allows users to record high-speed action at 30 fps. - Normal Movie mode delivers more than 500 lines of resolution - Digital Photo mode, with self timer, captures more than 700 still frame images on a single 80-minute cassette in SP mode. For SLR-style flash photography, the digital photo mode will accommodate a selection of Canon's speedlight flashes, including the 220EX, 380EX or 550EX.
- Direction Accurate Microphone.
- Programmed AE - Offers seven advanced recording controls -Full Auto Green Zone -Auto Mode -Manual Mode -Spotlight -Sand & Snow -Shutter Priority/Aperture Priority
- Picture Adjustment Supports -Camera Sharpness adjusts picture sharpness before recording.

QUICK DIAL 74

SONY

DSR-200A

3-CCD Digital (DVCAM) Camcorder

Combining a compact and lightweight body with the superior picture quality of DSP (Digital Signal Processing) and the DVCAM format, the DSR-200A is the ideal acquisition tool for video journalists, event and wedding videographers, stringers and production houses. 500 lines of horizontal resolution, 48kHz or 32kHz digital audio, three hour record time, and minimum illumination of 3 lux is only the beginning. Other features include 16:9/4:3 capability, Steady Shot, time code operation, time/date superimposition and an IEEE-1394 interface for direct digital output.

- **Variable servo 10X optical power zoom lens** goes from 5.9 to 59mm in 1.7 to 24 seconds. The manual zoom rocker is continuously variable right up to where the digital 20X zoom kicks in.
- **Sony's Super Steady Shot** reduces high frequency camera shake without compromising image quality. SteadyShot uses horizontal and vertical motion sensors that allow it to work accurately while zooming, moving (even shooting from a car), and shooting in low light conditions.
- Has **digital effects** including audio and video fade, overlap and Slow Shutter.
- **Automatic and manual focus**, iris, shutter, gain and white balance. Iris is adjustable in 12 levels from F1.6 to F11, shutter from 1/4 to 1/10,000 of a second in 12 steps. Gain from -3dB to +18dB in 8 steps.• **Zebra Pattern indicator**, bult-in ND filter.
- **Custom Preset function** lets you preset, store and recall custom settings for color intensity, white balance (bluish or reddish), sharpness and brightness.
- Stores Photo, Date/Time, Shutter Speed, Iris, Gain and F-stop for easy recall. So if you have to re-shoot, you know your original settings for every scene and frame.
- **Records Drop/Non-Drop Frame time code.** Time code can be read either as RC time code or as SMPTE time code
- Has a **large 1-inch B&W viewfinder** with 550 lines of resolution for easy focusing even in low contrast lighting situations. Separate information sub panel displays time code, battery time, tape remaining and other camcorder functions without cluttering up the viewfinder.
- Records **16-bit/48kHz audio on one stereo track** or 12-bit/32kHz with two pairs of stereo tracks (L1/R 1, L2/R2), so you can add stereo music or narration.
- **Automatic & manual** (20-step) **audio level record controls.** Monitor audio with headphones or from the LCD panel which has an active VU meter.
- **XLR input connectors** for mics and audio equipment.

DSR-300A

3-CCD Digital (DVCAM) Camcorder

Inheriting many of the same features and functions as the DSR-130, the affordable DSR-300A actually extends operational convenience with a range of new features and peripheral products. Remarkably compact and lightweight, the improved DSR-300A provides high mobility without compromising picture quality and can be held comfortably on your shoulder through the longest shoots and gives videographers the ability to acquire their footage quickly and easily.

- The DSR-300A has three 1/2" IT Power HAD CCDs to deliver 800 lines of horizontal resolution, 62dB S/N ratio and high sensitivity of F/11 at 2000 lux.
- Power HAD CCDs also gives you a low smear level of -110 dB (DSR-300) allowing more freedom to shoot highlighted subjects
- With built-in 26-pin VCR interface, they can feed composite or S-Video output signals to an external recorder for parallel or back-up recordings. VCR recording modes including Parallel, Internal (only) and External (only) are selected via the trigger switch positioned on the operational panel
- With the DSR-300A, a picture previously recorded on tape can be superimposed on the viewfinder screen (Freeze Mix Function), allowing you to easily frame or reposition the subject just as in the previous shot. Combined with the SetupLog function, the retake shot becomes a breeze
- LSI Digital Signal Processor (the very same one used by the DXC-D30 cameras) for a high signal-to-noise ratio of 62 dB.
- Both mini cassettes (PDVM series) and standard cassettes (PDV series) can be used with the DSR-300A. With PDV-184ME (standard), a maximum recording time of 184 minutes can be acheived. They can also play back tapes recorded in the consumer DV format
- For operational convenience while shooting, the Time Code is superimposed on the viewfinder screen or MONITOR OUT screen, even during playback
- DXF-801 viewfinder featuring variable peaking, 3 level tally light and a white LED light with 2 levels of intensity to illuminate the lens setting • IEEE1394 i.Link (out only)
- Color Temperature Shift allowing the operator to manually shift the white balance either towards blue or red to compensate for conflictive (color temp mix) and because of the wide range it also provides creative artistic painting.

JVC GY-DV500

1/2-inch 3-CCD Professional DV Camcorder

The world's first DV camcorder designed from the ground up for professional ENG work, the GY-DV500 combines the convenience and cost-effectiveness of Mini DV with the performance and features you need. Incorporate three 1/2-inch 380,000 pixel IT CCDs for superior picture performance (equivalent to 750 lines of resolution) superb sensitivity of F11 at 2000 lux and minimum illumination of 0.75 lux (LoLux mode). Rugged construction with a rigid diecast magnesium housing, Extremely portable, compact and light weight (lesss than 11 lbs. fully loaded). Additional features like the menu dial and Super Scene Finder assure ease-of-use and shooting flexibility, while the IEEE1394 and RS-232 interface allow integration into various non-linear and post-production systems. A professional camcorder in every sense, the compact, lightweight GY-DV500 redefines acquisition for corporate, educational, cable and broadcast production, as well as wedding videography and multimedia applications.

Professional Specifications

- Applies JVC's DSP with advanced 14-bit video processing to bring out more natural details, eliminate spot noise, accurately reproduce dark areas, and restore color information in dark areas.
- CCDs are equipped with advanced circuitry to virtually eliminate vertical smear when shooting bright lights in a dark room. Ensures efficient light conversion with a sensitivity of F11 at 2000 lux.
- CCD Defect Correction function evaluates white defects with the lens closed and then stores their addresses in memory. When the camera is turned on, the data is sent to the DSP for storage and real-time correction.
- Black Stretch/Compress function ensures accurate reproduction of black areas on the screen. Advanced color matrix circuits give even difficult images a very natural appearance.
- Multi-stream parallel digital pipeline processing at 40 MHz creates an ultra-smooth gamma curve, calculated using a true log scale algorithm. The result is a dynamic range of 600% to accurately reproduce fine details and colors in shadows or highlights.

Professional Performance

- Multi-zone iris weighting system gives priority to objects at the central and lower portions of the picture for accurate auto exposure under any condition, even if a bright subject moves into the picture.
- Adjustable gamma for adjusting the "feel" of the picture according to taste. Adjustable detail frequency for setting picture sharpness for a bolder or finer look.
- Viewfinder status display uses characters and menus to diplay selected information, including audio indicator, tape and battery remaining time, VCR operation and warning indicators. Camera settings and setup parameters can also be checked at a glance. A built-in menu dial lets you quickly navigate through the viewfinder menu.
- Highlight Chroma Processing maintains color saturation in highlights. The result is natural color reproduction, even in bright highlight portions of the picture.
- Smooth Transition mode ensures a smooth transition with no jump in color or light level taking place when manually changing gain or white balance settings

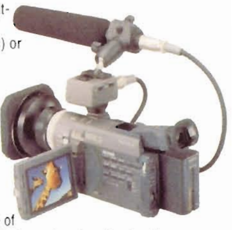
Professional Audio

- To complement its superior video performance, the GY-DV500 offers outstanding digital PCM sound. You can choose between two 16-bit 48-kHz channels or two 12-bit 32-kHz channels with a dynamic range of 85 dB.
- In addition to camera mounted mic, has two XLR-balanced audio inputs with 48v phantom power and manual audio control.Phantom power can be switched off when not in use.
- Side-mounted speaker lets you monitor audio in playback and recording modes without headphones. The speaker also delivers audible warnings.

QUICK DIAL 74

SONY

DSR-PD100 3-CCD Mini DVCAM Camcorder



The smallest DVCAM camcorder, the DSR-PD100 is also the first one with built-in image capture capability. The highly compact camcorder features three 1/4" 380,000 pixel CCDs that allow two scanning modes: 480 progressive (for stills) or interlaced (for video).

- The CCD's can be switched to scan in two ways: Interlace Scan for recording moving images and Progressive Scan for recording still images
- Super SteadyShot compensates for unwanted camera movement without reducing image quality
- A built-in 12X zoom lens is supplemented by a 48X digital zoom that can provide really close up shots
- Manual control of focus, gain, white balance and shutter speed. Also has full automatic control
- Records PCM digital stereo sound in both 48 kHz mode(16-bit) and 32kHz mode (12-bit). When a recording has been made in 12-bit mode, another stereo channel can be added later
- The DSR-PD100 has a 3.5" color LCD monitor with 184,000 pixels, opening 90° to the side and swiveling 180°. Also has a 180,000 pixel color viewfinder.
- Can record still images on both tape or removable media, such as Memory Stick
- Supplied XLR adaptor attaches onto the hot shoe of the camcorder, allowing external professional microphones to be connected to provide high quality audio sources. Through XLR adaptor, DC power (+48V for a microphone is also supplied from the DSR-PD100
- A 0.7X wide conversion lens is supplied, complete with lens hood, lens cap and protective bag
- Incl. 4 MB Memory Stick & Memory Stick/PC Card Adaptor

DSR-PD150A
3-CCD Mini DVCAM Camcorder

High quality acquisition in the DVCAM component digital format, as well as in DV, allowing up to forty minutes recording on one tape Mini DVCAM tape or over a full hour inthe DV mode. Suited for Event Videography and Video Journalist applications. This compact camcorder features three newly developed 1/3 inch 380K pixel CCDs.with increased resolution and sensitivity at reduced noise and vertical smear.• Allows two scanning modes: 480 progressive (for still) or interlaced (for video).• Complete Professional Audio functions with two built-in XLR inputs.

- Built-in electronic zoom lens features Autofocus and SuperSteadyShot with an MTF 12X high quality optical lens with manual Zoom, Focus and Iris control.
- Built-in slot for a flash memory card or Memory-Stick for still image storage. Up to 988 JPEG pictures can be stored in one 64 MB MemoryStick. The stored images can be mixed or keyed to the live image allowing logo insertion and/or mix effects.
- High resolution (500 lines) B&W viewfinder and a color swing out bright color LCD panel are included to make shooting a breeze.• Software package for logo generation and included USB port adapter are standard.

DSR-20/40 DVCAM Player/Recorders

The DSR-20 and DSR-40 are versatile DVCAM VCRs with compact chassis' and a variety of convenient functions for recording, playback and simple editing. They feature Auto Repeat Playback, Power-On Recording/Playback, multiple machine control interfaces and i.Link (IEEE1394) input and output. And, of course, they offer the stunning image and sound quality inherent to the DVCAM format.

- **I.LINK** They both offer i.LINK ((IEEE1394) input/output. In addition, in the "Digital dubbing including TC Copy" mode, full information of video, audio and time code of the original tape can be copied to another tape. Especially useful when making working copies of the original.
- **Inputs and Outputs**They provide a full range of analog video inputs and outputs for integration into current analog-based systems. They both offer composite and S-Video input/output, while the DSR-40 (only) offers a component output as well. The DSR-20 is equipped with analog audio inputs and outputs (RCA), the DSR-40 with RCA inputs and XLR-balanced output. These connections in combination with their i.LINK interface allow a smooth transition to an all digital system in the future.
- **Record/Playback Functions** Automatic repeat function for repeated playback. After reaching either the end of the tape, the first blank portion or the first index point, the DSR-20/40 automatically rewinds the tape, then starts playing back the segment again.
- They are capable of searching for Index Points, which are recorded on the tape as "in-point" marks every time a recording starts. They can also search for photo data recorded on a DVCAM cassette by the DSR-200A/300/PD-100, or where the recording date has been changed.
- **Reference Input** External sync input enables synchronized playback with other VCRs. Especially important in A/B Roll configurations. In addition, the DSR-40 only allows adjustment of H-sync and SC phase via the menu.
- **Control S Interface** both have a Control S input

DSR-20 Only
- The DSR-20 can be powered by AC or DC.
- Equipped with Control L interface, the DSR-20 can perform simple Time Code-based editing when connected to another DSR-20 or other similarly equipped VCRs/cameras.
- In addition to Control L, the DSR-20 also incorporates an RS-232 interface for remote control of basic VCR functions from a PC.
- Supplied with the RMT-DS20 Wireless Remote for control of basic VCR functions.

DSR-40 Only
- Equipped with an RS-422A interface, it can perform as the editing player in A/B roll or cut editing system.
- It also has a simple recording function which can be controlled either manually or via its RS-422A interface.
- The DSR-40 is not equipped with a synchronization capability, the editing accuracy is performed by pre-roll and play.

DSR-30 DVCAM Digital VCR

The DSR-30 is an industrial grade DVCAM VCR that can be used for recording, playback and editing. DV standard 4:1:1 sampling digital component recording with a 5:1 compression ratio provides spectacular picture quality and multi-generation performance. It has a Control L interface for editing with other Control L based recorders such as the DSR-200A DVCAM Camcorder or another DSR-30 . It also has a continuous auto repeat playback function making it ideal for kiosks and other point of information displays.

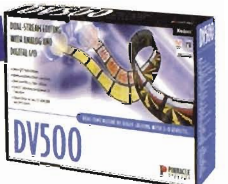
- Records PCM digital audio at either 48kHz (16-bit 2 channel) or at 32kHz (12-bit 4 channel) .
- Equipped with Control L, capable of SMPTE Time Code based accurate editing even without an edit controller. Built in editing functions include assemble and separate video and audio insert .
- By searching for either an Index point or Photo Data recorded by the DSR-200A camcorder, the DSR-30 drastically cuts the time usually required for editing. The DSR-30 can record up to 135 Index points on the Cassette Memory thanks to its 16K bits capability.
- Audio lock ensures audio is fully synchronized with the video for absolute precision when doing an insert edit.
- Built-in control tray has a jog/shuttle dial, VCR and edit function buttons. The jog/shuttle dial allows picture search at ±1/5 to 15X normal speed and controls not only the DSR-30 but also a player hooked up through its LANC interface
- DV In/Out (IEEE 1394) for digital dubbing of video, audio and data ID with no loss in quality.
- Analog audio and video input/outputs make it fully compatible with non-digital equipment. Playback compatibility with consumer DV tapes allows you to work with footage recorded on consumer-grade equipment. Tapes recorded in the DSR-30 are also compatible with Sony's high-end DVCAM VCR's.

QUICK DIAL 731

PINNACLE SYSTEMS

DV500

$879⁹⁵



Realtime DV Editing with 3D Effects

The DV500 is simply the most affordable real-time, native DV non-linear editing solution for video producers and videographers—ever.
A complete dual-stream, digital video production system based on DV (1EEE 1394) the DV500 plays effects, titles and filters instantly with no rendering. Internally the DV500 uses a dual stream hardware DV codec , providing real time special effects and transitions again with no rendering. The DV codec (uses the same encoding technology that exists inside your DV camcorder so there is no damaging transcoding or recompression) maintains a 100% digital communication between digital video equipment and the DV500, as well as providing extremely high quality encoding for analog video. The DV500 also provides simultaneous digital and analog video with audio I/O and includes support for MPEG-2 output for DVD, interactive MPEG-2 CDs, and web video streaming applications. In fact, the powerful authoring software bundled with DV-500 gives you the choice of delivery solutions – videotape, interactive CD-ROM, DVD and the Internet.

- Audio/video breakout box.
- Adobe **Premiere RT** realtime editing software,
- Pinnacle's **TitleDeko** a TV quality Character Generator software with hundreds of customizable styles
- Pinnacle's **FreeFX** a Plug in for Adobe premiere providing an elaborate xelection of complex broadcast quality 3D transitions
- Sonic Foundry's **Acid** Music allowing you to create custom music tracks for your production,
- Pixélan **SpiceRack** a collection of 300 unique images to spice up your production
- Minerva Systems' **Impression** authoring software allowing you to create a DVD or CD-ROM
- RealNetworks **RealProducer** to post your video on the web
- Adobe **PhotoShop LE**

matrox RT-2000

Real-Time Non-Linear Editing

Matrox RT2000 is a realtime nonlinear editing solution for corporate and event video artists, that provides an impressive array of professional features at an unprecedented price. The revolutionary Matrox Flex 3D™ architecture of RT2000 exploits the explosive 3D graphics performance of the award-winning Matrox Millennium G400 accelerator to provide broadcast-quality 3D DVE and 32-bit uncompressed animated graphics in a native DV editing environment. MPEG-2 output for DVD, Video CD, and web video streaming applications, along with 1394 and analog video output for tape distribution, rounds out the solution.

Real-Time Non-Linear Editing

- Matrox RT2000 lets you work with two video streams and a 32-bit, uncompressed, animated graphics layer in real time. Choose from organic and 3D transitions, 2D and 3D DVE, and transparency effects – in real time
- Realtime editing power gives you the creative freedom to experiment. Theres no penalty for changing your mind. Everything happens instantly, at full online quality, and you see the results immediately on your PAL or NTSC monitor.
- Instant random access to any frame in your project gives you a very responsive realtime scrubbing interface. You can see what's happening at any point in your timeline.
at full quality, whenever you want – without waiting for a preview to render

MPEG 2 Editing

- If you are acquiring video from an analog source, you can chose to edit in DV or in MPEG-2 4:2:2 I-Frame. Matrox RT2000 lets you capture and edit video in the MPEG-2 I-Frame format at variable bit rates between 10 and 25 Mbps. Whereas DV is fixed at 25 Mbps. MPEG-2 lets you digitize video at lower bit rates so you can make the trade-off between storage space and video quality when working on long form projects. You can offline at the lower bit rates and then autoconform at higher quality MPEG-2 or DV.
- MPEG 2 I-Frame is a better format for editing than MPEG-2 IBP or IP that you may have heard about because
it gives you instant access to every frame in realtime for frame-accurate edits, fast cuts and seeks, and a responsive scrubbing interface

Broadcast-Quality 3D Effects

- Matrox RT2000 harnesses the power of the Matrox Millennium G400 graphics accelerator via the revolutionary new Matrox Flex 3D architecture to deliver realtime.
broadcast-quality 2D/3D DVE and transitions
- You get over 500 realtime effects and transitions including page curls, perspectives, scaling, picture-in-picture, and organic wipes with customizable drop shadows, soft edges, and color borders

Versatile Analog and Digital Input/Output

- Matrox RT2000 supports all the input/output connections you'll need to get the most from your editing system Capture from analog or DV tape. Edit once, then output anywhere. Deliver on tape, Video CD, DVD, or the Internet.
- Y/C and composite video input/output provides capture from analog cameras and output to tape
- On-board 1394 input/output interface performs digital transfers to and from DV tape. Device control and batch capture support are included
- 48 kHz stereo audio input/output genlocked to video ensures perfect lip-sync
- MPEG-2 MP@ML output supports distribution applications such DVD and Video CD authoring
- MPEG-1 & RealVideo output is used for web video streaming

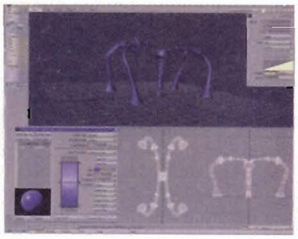
Advanced Productivity Tools

- Matrox RT2000 includes a variety of unique productivity tools to save you countless hours in the editing suite
  - —Matrox InfiniteCapture™ overcomes the 2 GB file size limit of Windows 98 by providing seamless capture and playback of unlimited file size within Premiere
  - —Accelerated print-to-disk quickly puts your realtime sequences into a DV or MPEG-2 file for storage, archiving, DVD authoring, etc.
  - —Accelerated image transfer of video frames to system memory over AGP increases performance of host-based software effects
  - —Versatile software codec lets you run multiple VFW applications concurrently so that you can render a project in a compositing or nimation application such as After Effects or 3D Studio MAX, while doing realtime editing on Matrox RT2000
  - —IEEE1394 interface software provides camera/VTR control to facilitate frame-accurate clip logging, batch capture, and print-to-tape
  - —Realtime audio and video preview during DV capture lets you hear and see your material exactly as it is recorded onto your hard disk

NewTek LightWave [6]

3D Animation, Modeling and Rendering Software

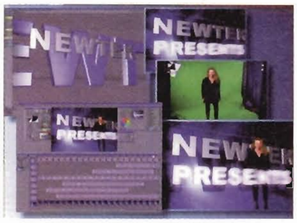
Explosive ideas that test the boundaries of 3D animation deserve a program that can realize them in exciting new ways. Creating worlds that no one's ever seen. Creatures that have never walked the Earth. Special effects, games, web sites - all creations that exist only in your mind. Until now............



The culmination of over ten years of development, LightWave [6] advances the state-of-the-art in professional 3D animation by adding a comprehensive set of groundbreaking character animation tools, advanced rendering capabilities, a new and improved architecture and a refined work environment. The three traditional areas of 3D, modeling, animating and rendering, have received massive enhancements in the new software. Among the thousands of changes in this completely redesigned system, LightWave [6] boasts real-time subdivision surfaces as a modeling and animation tool, radiosity, caustics, 160-bit floating-point rendering, a hybrid Inverse/Forward Kinematics engine and new character-animation technologies: LightWave, the recognized leader in the film and television industry, provides the most complete feature set of any 3D animation tool available—one of the reasons you can find LightWave 3D in more Hollywood animation suites than any other 3D program. And , LightWave [6] is the only 3D software system to run on Macintosh, Windows NT, Alpha and SGI.

Video Toaster

Tools for Broadcasting and Beyond



With a suite of tools for video creation including all the essential components for video editing, compositing and 2D/3D animation, the Video Toaster is an uncompressed D1 (composite, component, Y/C) Windows NT solution that offers a price/performance equation unmatched in the industry. Unique to the Video Toaster is a breakthrough technology developed by NewTek that turns a standard Pentium II or III processor into a highly specialized video DSP (digital signal processor) for time base correction and other capabilities typically associated with expensive custom chipsets. Superior to systems that cost tens of thousands of dollars the Video Toaster includes LightWave VT 3D animation software, Aura paint and compositing software and in-syncs Speed Razor 4.5 SE video editing software. Leveraging over 12 years of experience as an industry leader and pioneer in the desktop video, 3D, and 2D paint and animation markets, NewTek has created a product that contains award winning tools for creating better than broadcast quality television....at an unbeatable price!

Uncompressed Video— No Compromises

- The Video Toaster offers quality that's second to none. ALL video is ALWAYS stored in its native, uncompressed D1 video format. Unlike other boards that show compression artifacts, the Video Toaster maintains the original pristine quality no matter how many layers in your project.
- The Video Toaster allows you to manipulate uncompressed video in many ways, including traditional 2D compositing, rotoscoping, 3D animation and modeling and editing. By merging video into a 3D compositing and animation environment, editors will find a new paradigm for video effects and manipulation. The quality and capabilities of the Toaster are comparable or better than digital video editing costing $50,000 to $100,000.
- The Toaster provides an uncompressed D1 (composite, component, Y/C) digital video solution typically associated with extremely expensive systems. High-end facilities know that uncompressed digital video is essential to the editing process. Most compression-based systems are elegated to industrial and corporate video segments due to restrictions on the number of layers and quality degradation associated with multi-pass compression. All compressed systems produce unwanted artifacts. Because the Toaster utilizes uncompressed video, you can infinitely layer video without any concern about artifacts. This is the major separation between high-end and mid range systems. The Toaster brings that ultra high-end sophistication to users at levels at an unprecedented price point.

Powerful Editing

Video Toaster includes in-sync's powerful editing application, Speed Razor 4.5 SE.

- Project timeline that lets you easily create professional video projects containing unlimited layers of video, audio, still image files and animation.
- Comprehensive 2D compositing system
- The ability to capture, edit and output to uncompressed video and other formats, including ASF for video streaming on the Web and multimedia AVIs.
- Graphical workspace for digital media content management
- Real-time on-screen preview of edits
- Power character generator (CG).

Toaster Utilities

VT Director—Allows any program that supports cut and paste to display an image on a NTSC or PAL video monitor. Imagine working in Photoshop and being able to display your work on a video monitor with one keyboard shortcut.

ToasterVision—Allows you to preview both video input and output as well as animation on your RGB monitor at 720 x 480 resolution and full frame rate—60 fields per second.

ToasterScope—Keep your video legal as you work on it. The built-in waveform monitor and vectorscope lets you monitor your video input and output.

ToasterKey—Use ToasterKey in Aura to paint in realtime on your video monitor. You can also paint in realtime over live video. Bring frames into Aura from a live input with the frame grabber.

Continuously Upgradeable —Guaranteed Against Obsolesence

The Video Toaster was designed to last for years to come. Similar to the original Video Toaster for Amiga, which is still in production 10 years after its introduction, the Video Toaster utilizes a hardware system that leverages highly tuned software and the systems processor. The true power of the system comes from the proprietary software designed to create magic without the use of expensive video cards or bulky external hardware. By merging software and hardware, the Video Toaster can be upgraded and expanded well beyond current systems. NewTek will be adding modules for a real time 16-input switcher, DV I/O, storyboard editing, and ***real-time*** chroma keying and 3D DVE.

VIDEONICS® Effetto Pronto

Digital Video Effects and Compositing System for Macintosh

Effetto Pronto is a powerful combination of compositing and effects software, and a dedicated PCI hardware accelerator card. With a keyframe-based timeline compositing interface, Effetto Pronto blends all of the elements you want in your project: video, graphics, 3D animation and anti-aliased text from the CG module. It even includes an audio track so you can animate to the beat of the music.

- Effetto is resolution independent so you can mix and match a variety of formats and seamlessly bring them all together
- Advanced character generator offers unlimited text overlap, free-form text positioning, point and click typing, font and color palette thumbnails, drop shadows and glows and much more.
- Color correction, chroma and luma keying, 3D warps with perspective and 3D animatable lights.
- Provides true 3D perspectives for your work. Any object can be rotated or warped on its X, Y, or Z axis, and can be positioned anywhere in 3D space.
- Work with an unlimited number of tracks at any resolution

QUICK DIAL 732

ice.

ICE Final Effects Complete

Final Effects Complete is a premium set of 60 motion graphics effects' plug-ins for Adobe After Effects which create professional special effects for film, video and other digital video production. Final Effects Complete offers the ability to generate rain, snow, fire, smoke, bubbles, liquid mercury distortions, explosions, 3D particles, liquid displacement and lighting effects, a multitude of stylistic transitions and other video effects.

- 60 Hollywood-style filters and transitions– the same ones used in MTV and Fox promos.
- Full-featured 2-D and 3-D particle system. Create rain, smoke, fire, bubbles, ball action, confetti, jet trails, water ripples, cubes, star bursts, hair, liquid mercury blobs, fireworks and more.
- Particle World, an amazing 3D particle system with Z-depth and full camera tilt movement, lets you spray particle objects around your 2D image layers.
- Design unlimited effect combinations with interactive control over subtle compositing details. Effects can be animated over time to add even more sophistication.
- Incredible one-of-a-kind stylistic effects. Burn your image away like melting film. Paint in brush strokes with a glue gun. Scatterize every pixel of an image. Create psychedelic flowing backgrounds and kaleidoscope patterns. Flip your image like a page turning in a book to reveal another image. Materialize an image into glass or a blobby substance over time.
- Dramatic or subtle lighting with spotlights, multi-colored light rays, light sweeps and light bursts. Time controls for echo and motion blurring effects.
- Bend, slant, split, ripple, stretch, tile, twist and crumple your image or movie in an infinite number of ways. Turn them into a movable sphere or cylinder, rotate or manipulate them in any imaginable perspective without destructive clipping. The possibilities are endless.
- Remove tell-tale wires from blue screens. Create alpha maps and sepia tones, composite between effect and source, and even rotate between color values.

Final Effects

BlueICE Family

Accelerated Effects Hardware and Software

ICE brings high performance capabilities to industry-strandard tools like Avid Xpress, After Effects, Commotion, Cinelook and ICE's own Final Effects Complete for After Effects. ICE's unique multi-processing hardware and software products enable design professionals to create top-quality content on the desktop faster and more cost-effective than ever.

With ICE, a render that used to take an hour now only takes a few minutes — and the quality is so good that it is impossible to tell that the effect was not created on a proprietary system costing ten times more. ICE also brings its powerful hardware to video compression and distribution solutions ike Sorenson Video and Terran Interactive for to speed delivery of content in a variety of digital media formats including video, film, DVDs, CD-ROM's and the web.

After Effects on ICE

Motion Graphics and Visual Performanced Card

After Effects 'On Ice' provides blink-of-the-eye interactive responsiveness and lightning fast rendering across the entire application, not just with plug-in special effects filters. It gives users greater freedom to experiment in any compositing task, to perfect the right look, to complete more projects, and most important, to gain a vital edge. Along with a palette of awesome ICE effects, a must-have tool for After Effects users, AE on ICE adds performance where it is needed most — the core AE functionality of Geometrics, Compositing, and Motion Blur. So no matter if you are creating simple composites or intensive special-effects projects.

Basic Edition includes Basic BlueICE board, After Effects Production Bundle, ICE'd After Effects Application and ICEfx — ICE's own award-winning tool set for After Effects.

ultra Edition adds Ultra BlueICE hardware for the most powerful graphics perfomance available on the desktop.

It also includes an assortment of popular plug-in applications for After Effects These include an ICE'd DigiEffects CineLook, ICE'd Final Effects Complete and ICE'd Edges.

Basic BlueICE/Ultra BlueICE

Hardware Accelerator Cards for ICE'd Effects

The BlueICE video processing hardware is the cornerstone for the ICE family of graphics-intensive visual effects and media compression tools. With four Phillips TriMedia 1300 processors, the Basic BlueICE card has a combined computer power that exceeds a workstation with multiple 400 MHz Pentium processors. When applications get "ICE'd" they take advantage of BlueICE's multi-processing hardware to achieve performance gains of 2x to 50x compared with un-ICE'd software. Visual effects are rendered faster and files are compressed faster.

- The Basic BlueICE board works in both Mac and Windows NT systems and includes an interface to support an optional BlueICE SDI video daughter card. Basic BlueICE is also field-upgradable to Ultra BlueICE with a simple snap-on duughter card
- With eight TriMedia processors, Ultra BlueICE hardware delivers up to twice the speed of Basic BlueICE for the ultimate in performance — creating stunning graphics and publishing digital video for broadcast, CD-ROM or web distribution

BlueICE SDI Video Daughter Card

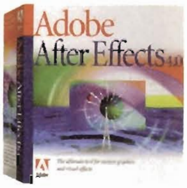
A revolutionary option for uncompressed video capture and playback, BlueICE SDI Video daughter card attaches to either Basic or UltraBlue cards eliminating the need for extra PCI slots devoted to video cards. The BlueICE SDI Video card provides SMPTE 259M video capture direct to disk. It provides frame-accurate deck control and captures QuickTime compatible media

- Real-time capture of SMPTE 259M video from your tape deck, fully integrated within the After Effects environment
- Uncompressed video footage is stored directly to disk with no compromise in video quality
- QuickTime format for seamless integrattion with your After Effects projects
- Video monitor output for viewing during creative iterations. When you are satisfied with the results, yoou can layoff directly to tape — uncompressed and real-time — all from within the After Effects environment
- Frame-accurate VCR control through the remote serial port VCR control software. Capture the exact footage you want to work within your After Effects project. The deck control interface for capture and upload is integrated right into the After Effects user interface

After Effects

The Ultimate Tool for Motion Graphics and Visual Effects

Adobe



The industry-standard for professional motion graphics, After Effects is the most powerful tool available for producing unlimited composites, fluid animations and sophisticated special effects. After Effects is also resolution independent (up to 4000 x 4000 pixels) so its the ideal design tool for film and video producers, graphic designers, multimedia professionals and Web developers. Produce stunning special effects for broadcast, film, video, multimedia, and on-line production right from your desktop. Create animations for openers, bumpers, on-air promos, commercials, music videos, titles, games, and more.

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Available for Macintosh and Windows 98/NT, After Effects is tightly integrated with the Adobe product family, so if you work with Photoshop, Illustrator, and Premiere, you already have the skills, shortcut know-how, and hardware you need to make Adobe After Effects a seamless, powerful extension of your creative arsenal. When you import Photoshop files, After Effects preserves layers, alpha channels, and transfer modes-you can then animate each Photoshop layer over time. Imported Illustrator files remain in vector format until you output your final composition, so you can scale these graphics to any size while maintaining the crisp detail of the original artwork. After Effects and Premiere can import each other's movies.

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MAPPING AND DIGGING THE DIGITAL LANDSCAPE

by
Jared Brookes

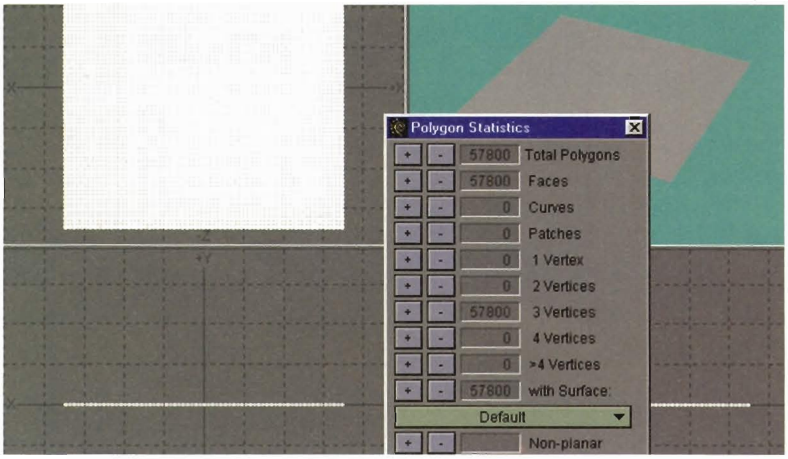
After all these years, CG artists remain fascinated with creating computer-generated landscapes, the digital dirt for their virtual worlds. In this tutorial, we will construct a custom landscape in LightWave using displacement maps as our bulldozer and fractal noise as our shovel.

1. Let's begin by building our ground plane. Start Modeler and click on the [Objects] tab at the top of the Modeler interface. Select [Box], and press the [n] key for Numeric.

We want a rather large plane for our landscape, so enter the following settings:

Low	High	Segments
-3.5 km	3.5 km	170
0 m	0 m	1
-3.5 km	3.5 km	170

Figure 1



Polygon Statistics

```
57800 Total Polygons
57800 Faces
    0 Curves
    0 Patches
    0 1 Vertex
    0 2 Vertices
57800 3 Vertices
    0 4 Vertices
    0 >4 Vertices
57800 with Surface:
Default
      Non-planar
```

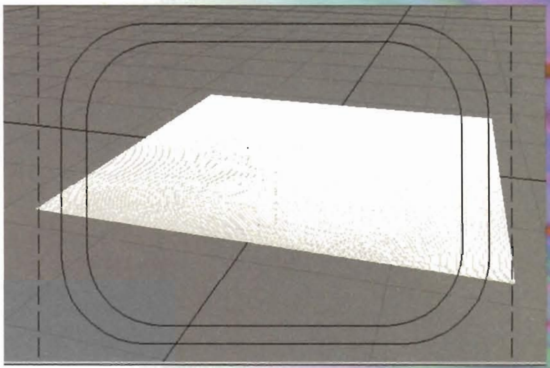


Figure 2

Click [Ok] to accept these values, and press [Enter] to make the segmented plane. Hit [f] to Flip the polygons, so they are facing up (Figure 1).

Press [a] to autofit the object to the views.

We now have plenty of real estate. (The plot of land you just made spans about nine square miles.)

Later in the tutorial, we will be applying image maps to this plane that will displace (raise) the polygons. Therefore, the plane must be highly segmented. If not, when the polygons are raised, the hard edges of the polygons will be noticeable. Even with the number of polygons that are in the object now, (28,900), complex patterns still will look chunky.

To make this plane more "flexible," press [Shift] [t] to Triple the polygons and break them into triangles. (Converting to triangles also minimizes rendering errors.) Click on the [Polygons] button at the bottom of the screen, and press [w] for statistics. Note that the plane now contains a total of 57,800 polygons.

Next, give the plane a surface name.

Press [q], and name its surface "Landscape 50K." Click [Apply] to close the requester.

We have completed the Modeler portion of this tutorial. Save the object as "Landscape50K.lwo" in a directory called "Landscape-T," inside the NewTek/Objects" directory. I've added the "-T" on the end, since many of you already have a folder on your hard drive called "Landscape."

2. Switch to, or load Layout, and click on the [Options] tab. Make sure that [Auto Key Adjust], [Auto Key Create], and [Left Mouse Button Item Select] are off. [Close] the panel.

Open the [Objects] panel, load "Landscape50K.lwo," and [Close] the Objects panel.

Click on the [Perspective View] indicator and change it to [Camera View].

Select [Camera] from the Edit Menu, and press [n] for numeric. Enter the following:

X: 2.4 km ___Y: 4 km ___Z: -10 km

Then click on [Rotate] from the Mouse menu, and use:

H: -17.00 ___P: 24.00 ___B: 0.00

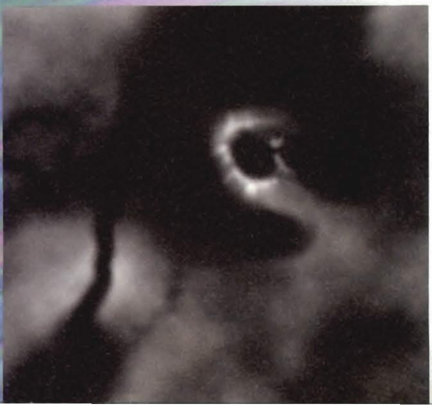
Press [Enter] twice to keyframe the camera at frame 0 (Figure 2).

Since, we are leaving LightWave for the next step, save the scene as Landscape1.

3. Now, we need to create an image map to apply to the plane. The image map functions as a guide to displace the points that make up the polygons in the plane. We'll make a grayscale image, since Layout only needs 8-bit grayscale data for the displacement channel. The lighter the area, the higher the points will be raised. Black sections of the image will have no effect on the points. They will remain at "sea level," or Y=0m.

Load your favorite paint program.

Figure 3



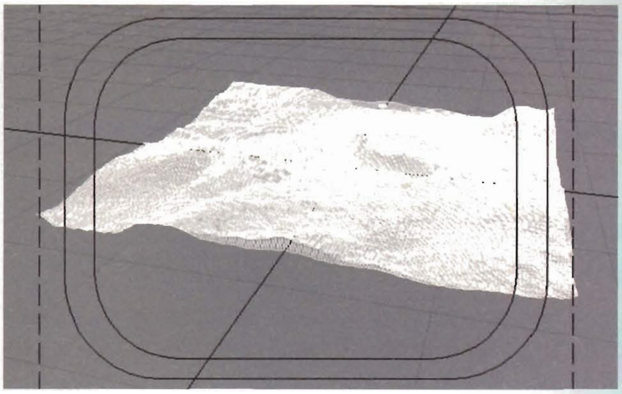


Figure 4

In my case, I'll be using Photoshop. Adapt the techniques to whatever program you use.

In Photoshop, I choose [File] [New], and set the Width and Height to 900 pixels. The Mode is set to "grayscale," and I fill the Contents with White.

I then make the foreground color white and the background color black.

Next, I choose [Filter], [Render], [Difference Clouds].

Then, I use a soft Airbrush at low pressure, and refine the darker (lower altitude) and lighter (higher altitude) areas.

When done, I add a Gaussian Blur filter to the image. (Figure 3)

Things to keep in mind when creating your image: Make sure that you don't paint any details that are too small for the plane's polygon resolution to comfortably reproduce. Your design will require a trade-off. Either you limit the amount of small detail in the image, or you go to Modeler and build a much more detailed plane. A more complex landscape object demands more computer processing power (unless you enjoy watching paint dry). Also, older versions of LightWave contain a limit of 65,535 points per object.

When you are finished, save your image as an IFF file (or another format that LightWave can load). I have saved the image as "LandMap1.iff," in a directory called "ImageMaps," in the "NewTek/Objects/ Landscape-T" directory.

4. Back in Layout, open the [Images] panel. Click on [Load Image] and select "Landscape1.iff."

Next, switch to the [Objects] panel and click on the [T] next to Displacement Map.

Leave Texture Type set to Planar Image Map, and use "Landmap1.iff" as the Texture Image. Click on [Y Axis] and select [Automatic Sizing].

Find Texture Amplitude. Now the fun begins. With this parameter you control the amount of displacement the image map exerts on the plane. (To create cool animation effects, you can apply an envelope to the Texture Amplitude that will change it over time.)

For my image map, I find that a Texture Amplitude of 75% works best. Try experimenting with this parameter to get a feel for how it functions.

When done, [Close] both of the panels, and return to the main Layout screen, where you should see something similar to Figure 4.

Let's render a frame. Open the [Camera] panel, and choose a suitable preview resolution. I selected "Medium Resolution (Video)." Now open the [Render] panel, and select a Render Display type. In my case, I chose "LW_QV."

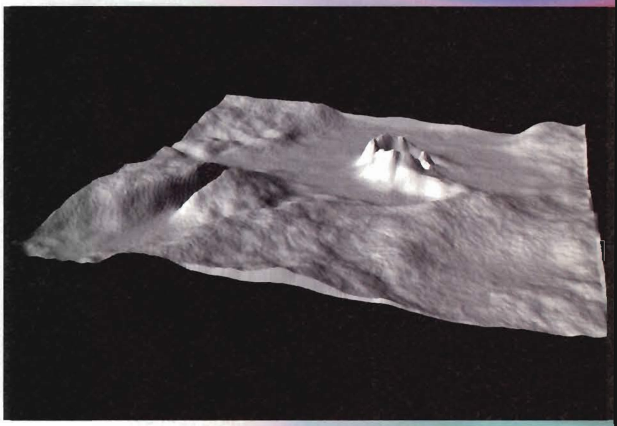


Figure 5

[Close] the Render Panel, press F9. (Figure 5)

5. If you take a good look at the image, you'll notice that the polygons that make up the landscape are still very prominent. To alleviate this problem, we can adjust the surface settings.

Open the [Surfaces] panel, and set Current Surface to "Landscape 50K." Change Specular Level to 6.0 %, Glossiness to 16 (or Low), and enable Smoothing.

Click on the [T] next to Bump Map, and try these settings:

Texture Type: Crumple
Texture Size: 95 m, 95 m, 95 m
Texture Amplitude: 30 %
Number of Scales: 6
Small Power: 0.9

This texture breaks up the polygon pattern, and hides the fact that the landscape is composed of triangles. To make subtle changes to the amount of apparent detail in the Crumple pattern, experiment with the Texture Amplitude parameters.

Click [Use Texture], and [Close] the Surfaces panel.

Press [n] to move the Camera to:

X: 1.5 km ____Y: 2 km ____Z: -5 km

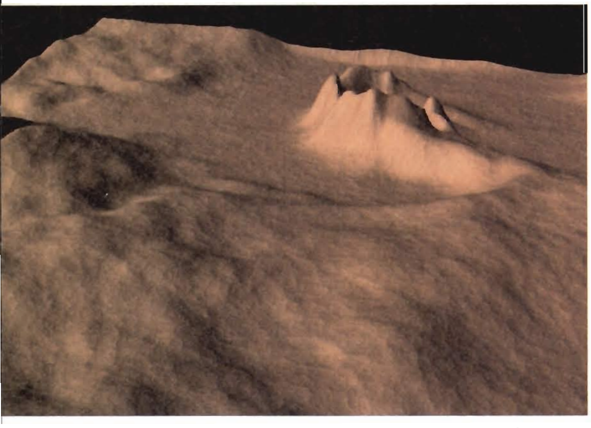


Figure 6

Select [Ok], and hit [Enter] twice to keyframe the camera at frame 0.

Pressing F9 should yield a result like Figure 6.

6. To make the surface look more interesting, we will recruit our old friend Fractal Noise.

Open the [Surfaces] panel again, and click on the [T] button next to the Color channel. Use the following settings:

Texture Type: ________Fractal Noise
Texture Size: ________45 m, 45 m, 45 m
Texture Color: ________180, 110, 74
Frequencies: ________3
Contrast: ___________0.7
Small Power: ________0.5

Click [Use Texture] and Press F9 to see how this texture affected the landscape. Notice that the Color channel's fractal noise settings have a parameter called Texture Color. The color that you pick here is applied to the surface color in the pattern of the noise. Play around with the two colors to achieve your desired look. If you're using a newer version of LightWave, feel free to add additional layers of texture.

7. Choose the [T] next to the Diffuse channel. Enter these values:

Texture Type: ________Fractal Noise
Texture Size: ________45 m, 38 m, 38 m
Texture Value:________50 %
Frequencies: ________3
Contrast: ___________0.6
Small Power______0.5

Select [Use Texture] again, and [Close] the Surfaces panel

Applying the second fractal noise pattern to the Diffuse channel breaks up the detail a bit more. This time, the pattern affects the lightness and darkness of the surface.

Again, press F9 to render the landscape. (Figure 7).

When you are satisfied, open the [Objects] panel and click [Save Object], and answer "yes" to the question, "Overwrite Existing File?" When you save the object, all of the texture settings are retained in the object file. Close the Objects panel.

Note: If you click on [Save Transformed], you save a displaced version of the object. Try it sometime and load both Landscape1.lwo and the transformed object in Modeler. You will notice that Landscape1 is still flat as a pancake, but Landscape1Transformed resembles Butte, Montana. You can see why displacement mapping sometimes is employed as a modeling tool.

8. Let's fly over our terrain. Click on [Numeric], and move the Camera to:

X: 2.5 km ____Y: 1.2 km __Z: -960 m

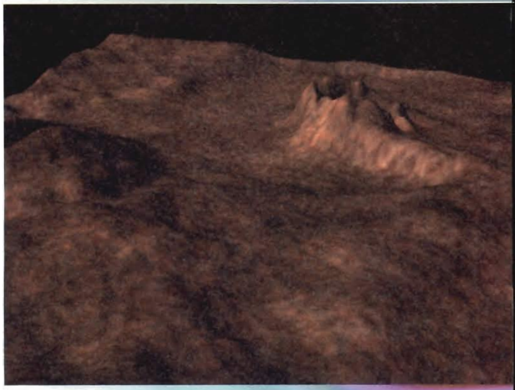


Figure 7

Then, select [Rotate] from the Mouse menu and use:

H: -50.00 ____P: 26.00 ____B: 0.00

Press [Enter] once, type 120, and press [Enter] again to create a motion key at frame 120.

To have the camera ease to a stop, press [f], type 120, and press [Enter] to go to frame 120. Click on Spline Controls, set Tension to 1, and click [Ok].

Save the scene.

To adjust the render settings, first, open the [Camera] panel, select a resolution and pick your desired level of Antialiasing. (Low or Enhanced Low is usually sufficient for most projects.)

Next, open the [Render] panel, and set Render Display to (none). Click on either [Save Animation] or [Save Images] and select a format and location to save the file(s).

Enter these values:

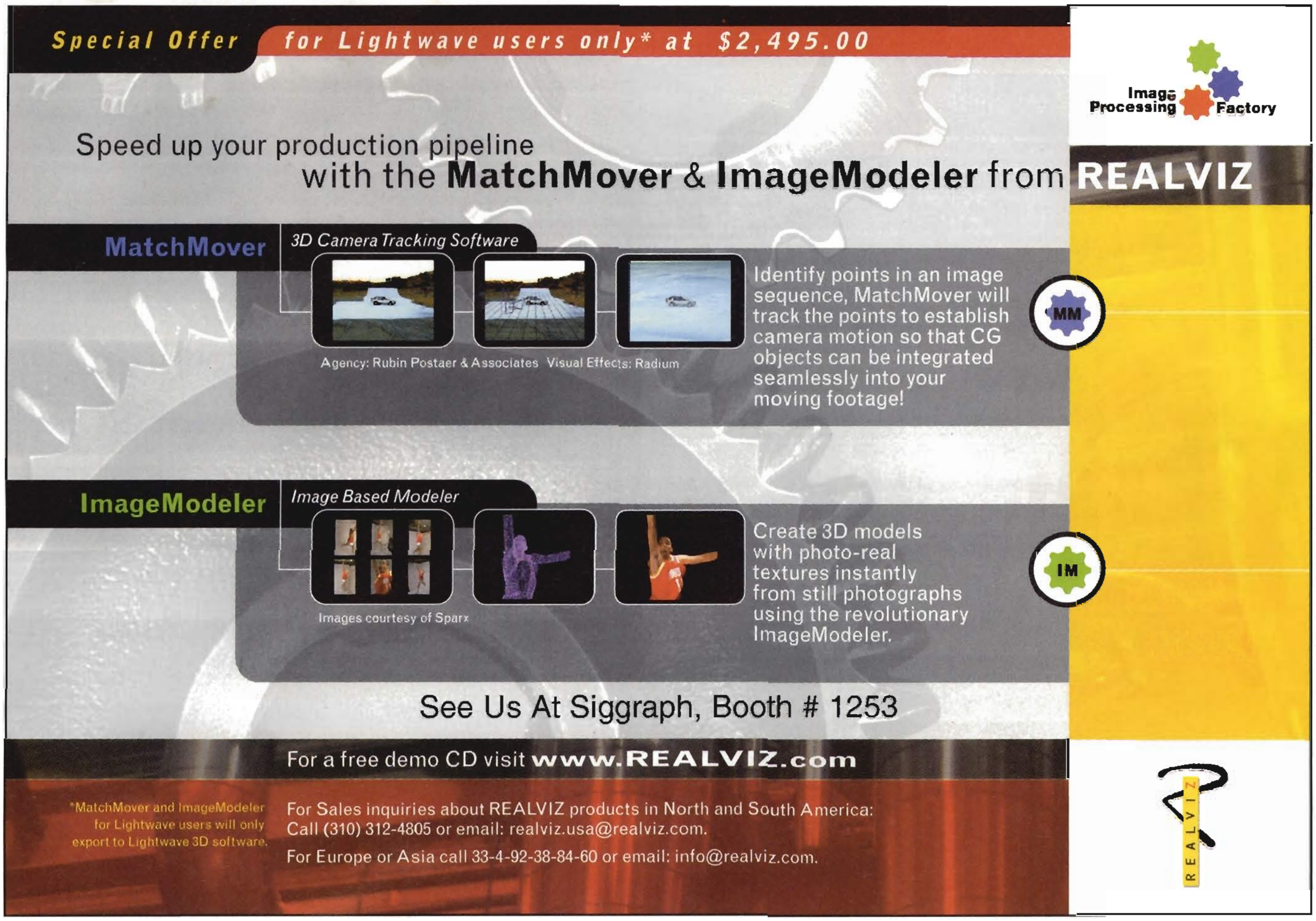
Render First Frame _________ 1
Render Last Frame _________120
Render Frame Step _________1
Automatic Frame Advance ____On

Click [Render]. While you are waiting, think about what would happen to your landscape if you animated the displacement map settings. I know that you will invent a multitude of uses for displacement mapping.

As usual, the object, scene, and image map have been provided for you at www.newtekniques.com.

Jared Brookes is a freelance 3D Modeler/Animator and analog synthesizer programmer, currently based out of Calgary, Canada.

Feel free to check out the music and computer-generated images on his web sites "Synthetic Reality" and "Voltage Control" at: www.blitter.com



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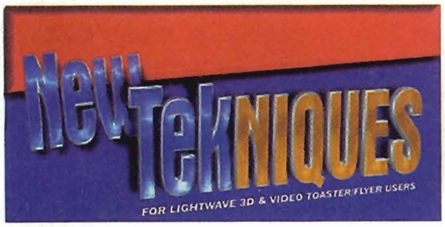

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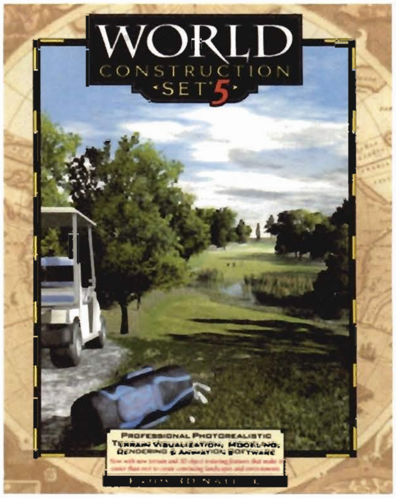
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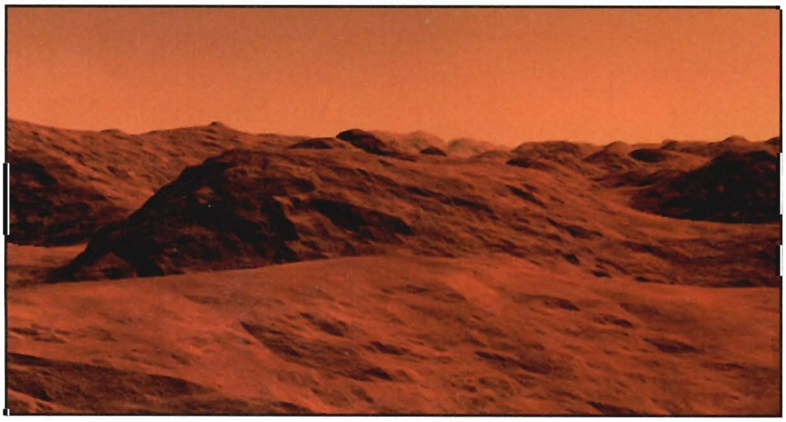
STRANGE NEW WORLDS

Using WCS V5 with LightWave

By Jon Carroll

World Construction Set is a landscape rendering program from 3dNature (formerly Questar Productions) that runs on Windows, Alpha, and Macintosh systems. Recently, movie fans saw the program at work in a season-transforming digital matte in the Academy Award winning *Cider House Rules.*

I first learned about *World Construction Set* (WCS) at an Amiga user group meeting about five years ago. A friend with one of those amazing '030 accelerator cards (amazing to me with my A2000HD) and a 14.4 modem had received a picture from a friend over CompuServe. The lovely landscape - an original demo shot from WCS - was certainly better than anything I had created in VistaPro.

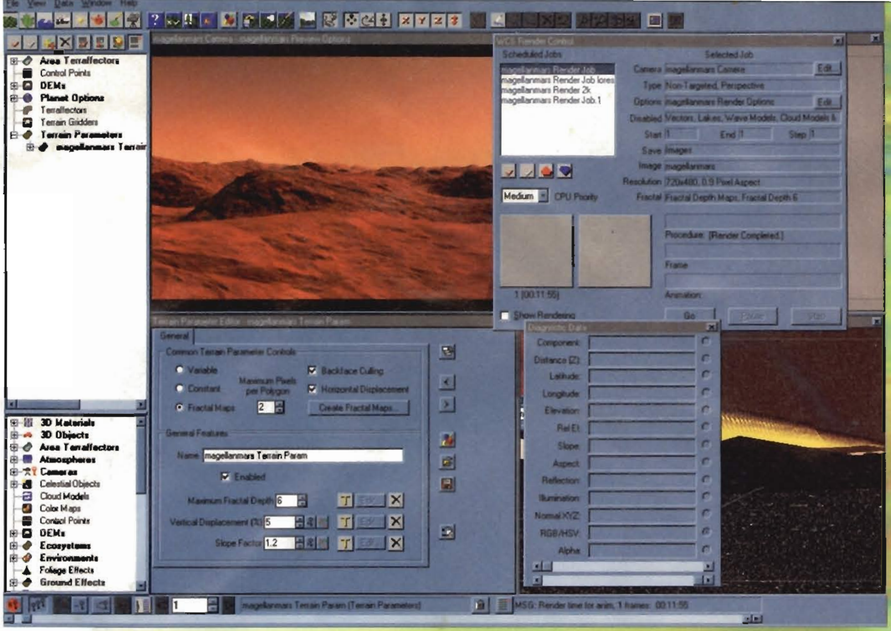


Fast forward to two years ago when I was just starting to do print-resolution 3D illustrations in LightWave for White Wolf's Trinity role-playing game. I was asked to do some landscape shots and remembered the image I had seen so long ago. I picked up a used copy of WCS 2 and started working in it immediately. Of course, it took me a few shots before I completely got the hang of it. Version 3 of WCS included nifty integration tools for LightWave, namely their Z-buffer compositing plugin.

Two versions later, WCS has continued to improve, adding more features that better integrate it with 3D programs. (Max and LightWave 5.x are currently supported.) WCS can exchange camera and light motion data with LightWave. The program also can import 3D objects and use them to cast shadows onto the terrain. With recent improvements, you can render textured 3D objects directly within the software. But probably the most anticipated feature of WCS in version 5 is its capability to use 3D objects as "foliage."

WCS uses an ecosystem mapping technique to place foliage onto the landscape. According to this system, grass and trees grow in low, flat areas. Grass tends to fall off at higher altitudes, and steep slopes consist of stratified rock. Of course, you can control these parameters.

In versions prior to 5, you were limited to "scaled image textures" as foliage. To understand how the old method worked, visualize tree images mapped onto polygons placed across the landscape according to a procedural pattern sensitive to both the orientation of the terrain and its altitude. With the new version, you can use 3D objects (including things imported from LightWave or trees from 3D tree libraries) as foliage. Foliage isn't just limited to trees. It can be grass, people, cattails, moss, or rocks.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Maximum Pixels per Polygon 2
☑ Backface Culling
☑ Horizontal Displacement
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☑ Enabled
Maximum Fractal Depth 6
Vertical Displacement (%) 5
Slope Factor 1.2
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magellanmars Render 2k
magellanmars Render Job.1
Camera magellanmars Camera
Type Non-Targeted, Perspective
Options magellanmars Render Options
Disabled Vectors, Lakes, Wave Models, Cloud Models &
Start 1 End 1 Step 1
Save Images
Image magellanmars
Resolution 720x480, 0.9 Pixel Aspect
Fractal Fractal Depth Maps, Fractal Depth 6
Medium CPU Priority
Procedure: [Render Completed.]
1 [00:11:55]
☐ Show Rendering
MSG: Render time for anim, 1 frames: 00:11:55

Because of the recent interest in Mars, I decided to see if I could produce a reasonable facsimile of Mars in WCS. (For those of you that haven't seen the Pathfinder images, Mars has rather rough terrain and is covered with rocks.)

To begin, I had to acquire a suitable sample of Martian terrain. After much searching, I found images on the Internet at http://ltp-www.gsfc.nasa.gov/tharsis/regional. html that were made from the Mars Orbital Laser Altimeter, a device mounted on the Mars Global Surveyor probe that measures the heights of ground areas on Mars. One of the problems I discovered about the images is that NASA used a hue-based color index for their altitude variations instead of the linear RGB index that WCS expects from RGB topographic maps. Despite this, I still was able to import the data into WCS and the technique worked well enough to give me a good approximation of Martian terrain.

The following short step-by-step tutorial demonstrates how to make a Mars landscape with WCS version 5.

1. Open up WCS and start your new project. Before you import that data, you first need to set the diameter of your world to that of Mars in Planet Options. Select the Terrain task mode, then double-click on Planet Options in the Scene-at-a-Glance list. Set the planet radius to that of Mars (conveniently supplied as a preset).

2. Crop the terrain image so only the landscape part remains. Be sure to save the original image.

3. Import the cropped terrain image into WCS using the Import Wizard. Use the elevation and dimensions provided in the original image to size the DEM data produced. (In case you're wondering, I used Schiaparelli crater from the webpage mentioned above.)

4. After the importing is complete, set your basic ground colors. I made a fractal pattern based on colors I pulled from Mars images on http://mars.jpl.nasa.gov/MPF/ops/prm-thmb1. html

5. Use a viewport for an overhead view and another for an OpenGL preview to position your camera.

6. Once you have decided the initial camera position, begin to figure out how much the camera will move during your shot. Then you can select those DEMs (Digital Elevation Models) in the scene that are over the horizon from your view and remove them from the scene. Even though WCS can render unlimited amounts of terrain, it will improve the interactivity of the program to reduce the number of DEMs.

7. Find out which DEMs will be closest to the camera during your shot and use the interpolate command to increase their resolution, especially if you move the camera close to the ground. This procedure must be followed with these Martian terrain samples because they are incredibly large.

8. Go into LightWave and build some generic rocks. I made six of them, trying to keep the polygon count at 300 or less for each one. Larger polygon count rocks can be used when placed individually as a Foliage Effect, but should not be used as part of an ecosystem due to render time and memory considerations.

9. Start building your ecosystems in WCS. For finer control, create two ecosystems of rocks - one set with the larger average size (about .75 m), and the second smaller (about .1 m). With this setup, you can adjust the ecosystems so the rocks get smaller as they go further up slopes (set the slope factor lower for the larger rock ecosystem). Give the small rocks a very slight positive Relative Elevation effect, and they will collect in the low points and stay off the ridges. The ecosystem for the larger rocks needs an even stronger Relative Elevation effect. Also, when you set the dissolve parameters, the rocks, at the distance, will fade into the terrain; thus providing a natural loss of detail as well as drastically cutting render times.

10. Adjust your sky color to one appropriate to Mars (orangish tan and very desaturated, and the zenith turns very dark).

11. Do a preview render in WCS and begin to adjust the Ecosystem parameters to your liking.

12. Increase the Fractal Depth of your scene and generate fractal maps. This process will increase the apparent detail by subdividing the polygons in your terrain and applying a fractal displacement routine to the vertices, which produces a very natural variation in the terrain and can also hide polygon edges. You will need to experiment to find the right balance between apparent detail and render time.

If you like, you can continue to work with the ecosystems to get the right effect. From my experience, I find it difficult to decide exactly when I have achieved "right enough" without spending all of my time tweaking and rendering previews.

In my next tutorial, I will cover how to land a LightWave-rendered spacecraft onto your WCS landscape. (*Ed. Note - You can find this tutorial at www.newtekniques.com.*)

Jon Carroll is a freelance writer, animator and production designer living near Los Angeles, CA. He can be reached at draven@infi.net

REQUIRES:
LightWave 4.0+

THINKING ABOUT THE BOX

Wrapping a Demo Reel

by
Jeff Scheetz

Whether you are looking for work as a Hollywood animator, trying to pick up a logo gig at a local TV station, or applying for a cool job at a game company, most of us have boxed up our demo reel. With pride - and hope - we send forth this pint-sized agent to represent us. Arriving alone, your animated representative must sell you to the person hiring. Sadly, most reels show up at the door and shout, "The artist who made me couldn't care less if you watch or remember me."

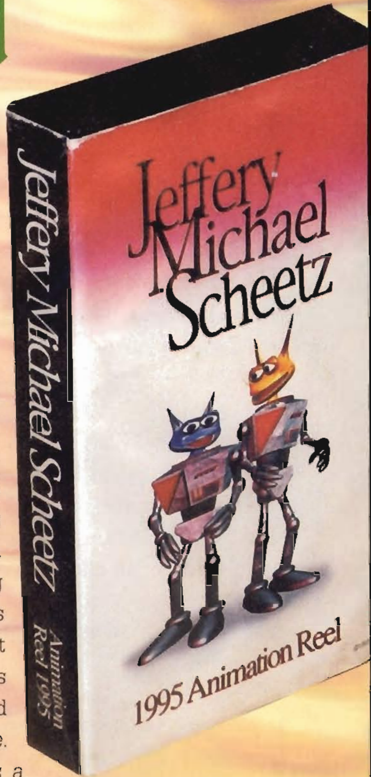
Two types of hiring modes prevail; first, and my favorite, "YES, WE ARE HIRING! HURRY!" In this situation, you can write your e-mail address on masking tape, slap it on a T-120 videotape, and expect to get a job if your work is good enough. "Editing, sound effects, titles...nobody cares, we need help now! Just show me great work and I will overlook EVERYTHING else." This happens, but very rarely; and if you are unemployed, you can't wait for it.

Less exciting - but far more common - is the long burn / small expansion approach to hiring. At Joe's Animation Studio, a job opening has not occurred in months. Joe has been reviewing and evaluating reels as they come in; and he put the fifteen best ones on his top shelf - the graveyard where good reels often die.

Suddenly, Joe receives a call telling him that he won a job; but he has to be in production by the end of the week. Joe doesn't have the time to watch all of the tapes again. This is it - your moment in the sun.

Is this really the time to have your video emissary wrapped in a black sleeve, with your e-mail address taped to its butt? Six weeks ago, Joe liked your reel enough to put it on the good shelf; but I can assure you, today, he has no clue about what's inside. He's too harried to remember your awesome F-16; and he's too busy to review the reel again. Too bad, because he's looking for people to work on an F-16 fighter combat game!

It gets worse: Joe is more likely to hire someone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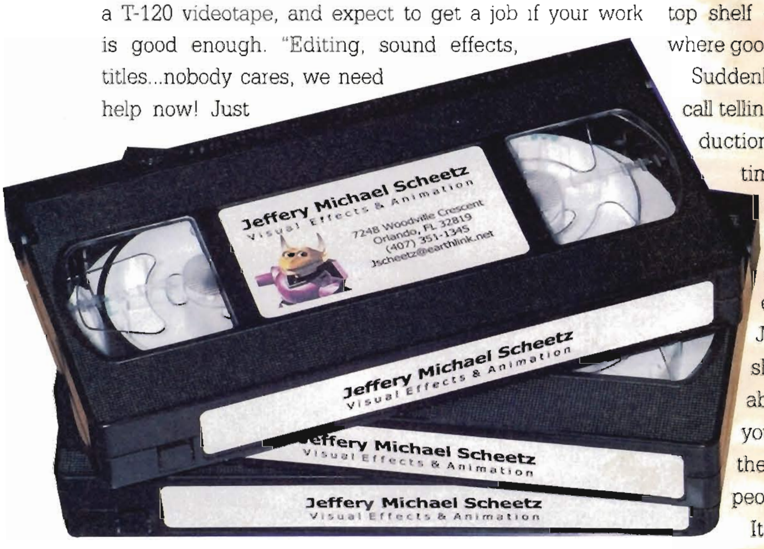
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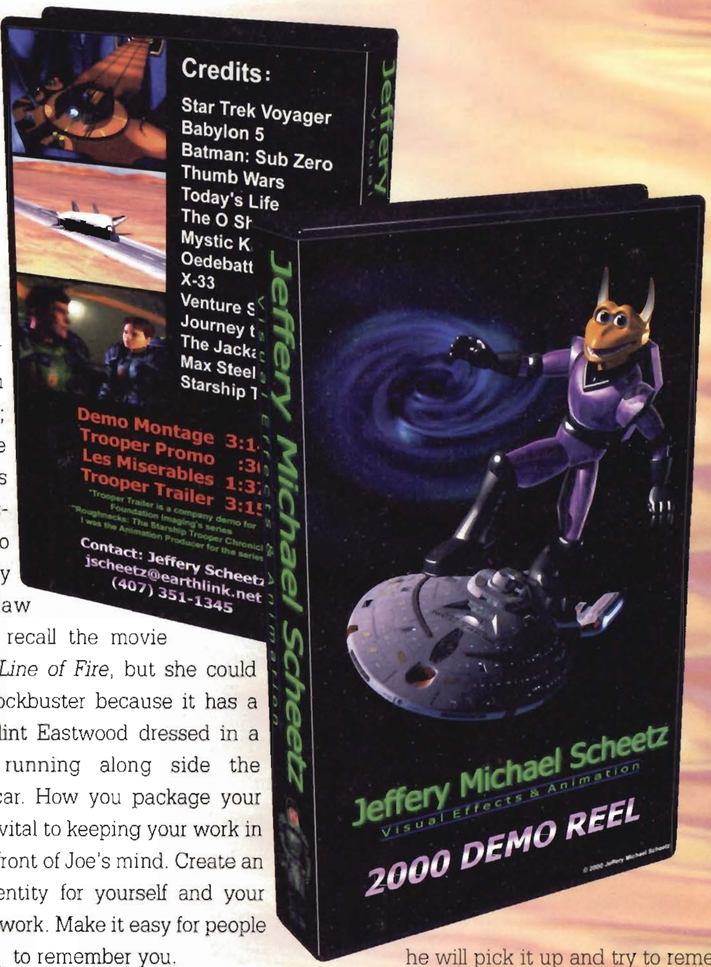
whose tape just arrived - even if an older reel is better. Why? Because he is watching it in active recruitment mode. The question on his mind is: "Should I hire this person today?" That was not his mindset when your tape arrived 6 weeks ago. So it's your responsibility to make hiring you as easy as possible for Joe. By doing so, you gain advantage over animators who don't.



Credits:
Star Trek Voyager
Babylon 5
Batman: Sub Zero
Thumb Wars
Today's Life
The O Sh
Mystic K
Oedebatt
X-33
Venture S
Journey t
The Jacka
Max Steel
Starship T
Demo Montage 3:1
Trooper Promo :3
Les Miserables 1:3
Trooper Trailer 3:1
Contact: Jeffery Scheetz
jscheetz@earthlink.net
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2000 DEMO REEL

Take your cue from Hollywood; informative packaging is key to a successful video release. My mother-in-law could never recall the movie title, *In the Line of Fire*, but she could find it at Blockbuster because it has a picture of Clint Eastwood dressed in a black suit running along side the President's car. How you package your demo reel is vital to keeping your work in the forefront of Joe's mind. Create an identity for yourself and your work. Make it easy for people to remember you.

If you ascend to Joe's top shelf, your tape case should be advertising your skills every time he looks at it. Think of the case's spine as a one by eight-inch free ad. Obviously you want your name there. And you want it big If you pick an unusual color combination or font make sure that it is readable from across the room. (Ed. note: Studies have shown that black on yellow is the most legible from a distance.)

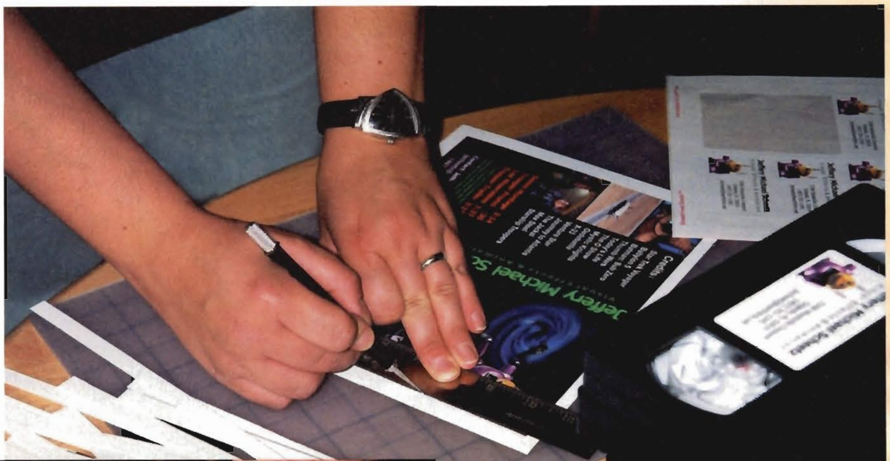
The front cover should feature your signature work or style. If your reel is a single piece such as a short film, it could look like a movie box. If you worked on lots of small jobs, create a collage of your best imagery. Trust your instincts and be bold. Put artwork on the case that will entice Joe to watch your tape when it first arrives and will trigger his memory months later.

When the key moment hits, Joe may not watch your tape again; but I guarantee he will pick it up and try to remember what's on it. Tell him! Decide how you want to pitch yourself and do it!

On my reel I send two messages, first, "I like to make my own stuff." My character "Zonk" originally appeared in *LIGHTWAVE-PRO* and on the cover of my demo reel in 1995. (See Zonk Reel.) Every few years I update his look and name. In 1997, Steve, version 2.0, was featured on the cover of *LightWavin* magazine. About a month ago, I built Rudy with hooks for motion capture. His mocap tests are featured on the new demo tape.

Zonk/Steve/Rudy will be on all my future demo covers as a measuring stick for my evolving skills. As I change and develop, so will he. I want my free-lance clients to see him as my mascot - my brand. I also reprise his image on my cassette labels, business cards and shipping stickers. (See VHS Cassettes.) In the future, Rudy will reincarnate in my print ads.

The second - and more commercial - message is "I worked on *Voyager!*" (Truth be told, I have only worked on about four episodes; but I *did* work on them.) In Florida, I'm marketing my services to people outside the Hollywood LightWave community. Most of my customers have never seen *Mystic*



Credits
Jeffery Michael Scheetz
2000 DEMO REEL

Knights of Tir Na Nog, or *Roughnecks: The Starship Trooper Chronicles*, (projects that I contributed to significantly); but they love telling their clients that I used to work on *Star Trek*. If I was still in L.A. and I wanted to work on an all CGI children's half-hour show, the cover would feature *Troopers*.

Or maybe not. When large numbers of animators come off the same project, they tend to have similar demo reels; therefore, your next employer will have difficulty discriminating between you and the guy who sat next to you at the last company. Insult is added to the injury of getting laid off. In these situations, a personal project can give you the edge.

The back cover is a great chance to present more information. (See Back Cover.) Since your résumé and cover letter almost never remain with the tape, include a short job history. If this is your first job, add more artwork. If you are trying to sell your services rather than find a job, the back cover is great place for credits or a small company bio. If you worked on a large team project, you can highlight your specific contributions.

I added additional screen shots from my reel: the X-33 project (which promotes my aerospace experience) and Batman (a universally recognizable and popular icon). Just for fun, I put a picture of my baby daughter Emilie on the spine. (See Emilie Trooper.) Occasionally, I add bits of dressing: Bar codes, FBI warnings, VHS logos, copyrights. Some folks - not all - are impressed.

The animation industry in Hollywood is experiencing severe growing pains. One minute your job seems secure. Then, Boom! You're on the street faster than you can say *REBOOT*. Since work will continue to be granted on a project by project basis, halfway through each job you should be looking for your next one. How well you market yourself plays a crucial role in your ability to earn a living. A great looking, well-illustrated case will never get you a job if you have a bad reel; but it will help keep a great reel from falling between the cracks.

As a veteran Hollywood animation supervisor, Jeff Scheetz has evaluated countless demo reels. Currently, he is a free-lance animator living in Orlando, Florida. He can be reached at jscheetz@earthlink.net.

Packaging Tips

1. Use plastic cases with a full size window, which allows you to insert your own artwork. Look in the yellow pages under Video Tapes - Wholesale. Most suppliers can get you the cases, cardboard mailers, and VHS cassettes in bulk. (See Insert.)

2. The Avery Label Company makes self-adhesive pre-cut VHS labels (side and face) for ink jet and laser printers. On their web site (www.avery.com), they have a free wizard for Microsoft Word that makes formatting easy. They also have a free demo of their stand-alone printing software. It's easy!

3. Buy or borrow a good printer. They are relatively inexpensive now and it's worth it. (In a budget crunch, color photocopies are an economical alternative.)

4. Pay for the good paper. For ink jet, the glossy photo paper costs around sixty cents a page and it looks great! Using multimedia film is overkill. (See Cutting.)

5. Consider your budget while picking colors. By having a black background, I'm using a lot of expensive ink. A white background may be very effective and much more printer friendly.

6. When possible, re-render your artwork at a higher resolution using square pixels. My final case cover was created in Adobe Photoshop at 3000 pixels by 2320 pixels and printed at 300 pixels per inch. Re-touching is not cheating.

7. SPELL CHECK! These labels can take 20 minutes apiece to print. You do not want to wait through 40 printings only to find a glaring spelling error! If you do, bite the bullet and re-do them.

8. Make sure you put all your contact information on the case and the tape itself. Even cool cases get lost.

9. If you can't find any great looking images to put on your case, maybe it's not really the right time to be making a demo tape.

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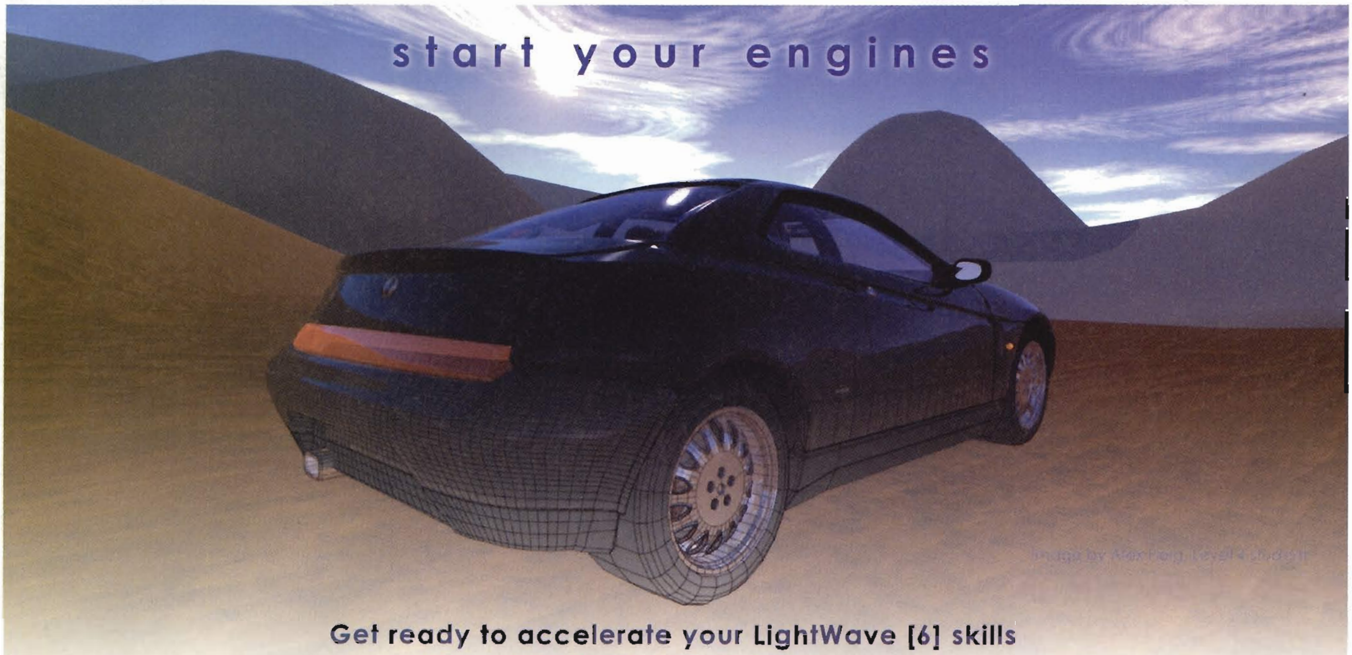
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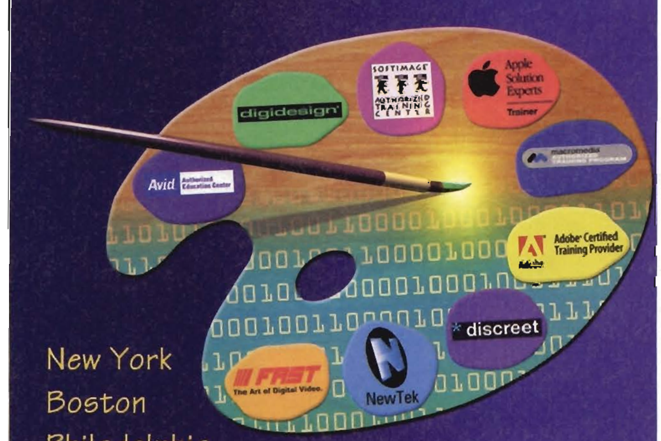
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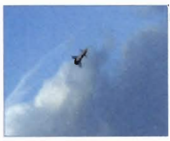

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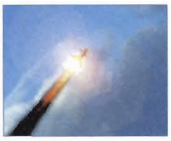

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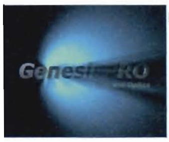

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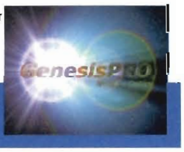

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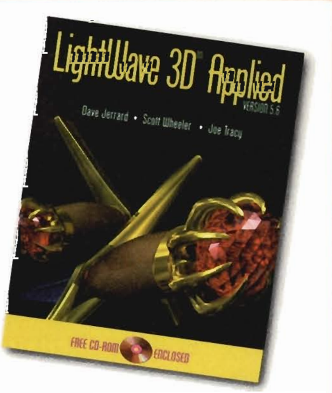

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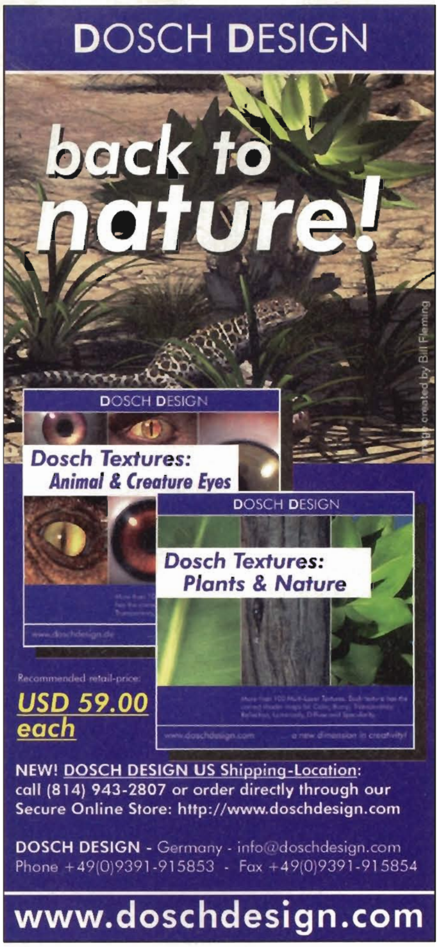

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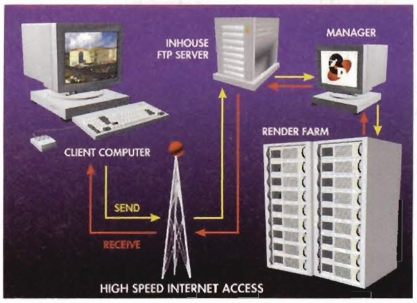
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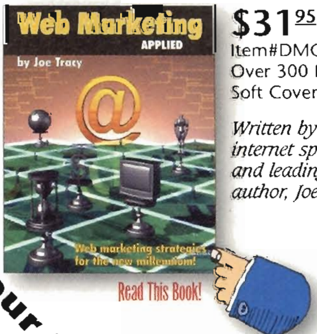

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DON'T PANIC

For Every End There is a New Beginning

It was a pleasant Friday afternoon at Foundation Imaging and a typically beautiful Southern California day. People were in good cheer as they looked forward to the weekend and a chance to see some blue skies that weren't 1024 by 768. And then, a voice came over the intercom, calling an assembly on the soundstage. This was nothing unusual, as several of these meetings had occurred in recent months, usually to share some good news or future company plans with the ranks.

This time, the news wasn't so good.

The smiles and laughter quickly faded as it was announced that an expected contract for a new job did not come through. Without a significant new contract, the large number of animators who had worked on *Starship Troopers* and *Max Steel* simply could not supported. A systematic layoff was about to begin.

Everyone was shocked. No one had seen it coming (including the management of Foundation) but, unfortunately, Hollywood has a habit of throwing curve balls when you least expect it. The unpredictable nature of working in film and television has led to recent layoffs at most of the major LightWave houses, displacing a lot of talented people without warning. After the news came down, feelings ran from disbelief to downright panic. For many of these people, Foundation had been their first real job - their dream job, in fact. So what does one do when your dream is unceremoniously shattered?

First of all, in the immortal words of *The Hitch Hiker's Guide to the Galaxy*, DON'T PANIC. You have to realize that most people who work in Hollywood get hired on a job by job basis. If you're employed by a movie, you usually work for a few weeks to a few months; a TV series can employ you for years; and freelance gigs have their own timetable. After they get used to it, many people actually enjoy this nomadic, ever-changing lifestyle.

However, Foundation Imaging management (and others) appreciates how difficult it can be to find good people and will try to hold on to their talent pool, moving them from project to project instead of laying them off. When you have ten or twenty employees, this approach isn't too difficult, but once you've grown to over a hundred, you need some really big jobs lined up, one after another, to keep the momentum going.

Sometimes it just doesn't happen.

So, for those of you looking forward to your big break and making that magical journey to Hollywood, heed these words: no matter how wonderful and happy things may seem, in a dog-eat-dog town, the worst can (and often does) come without warning. For these rainy days, have some money and credit cards stashed away and, at all times, an up-to-date demo reel (don't wait *until* you get laid off to make your reel, when you may have limited or no access to the material you worked on). Also, always keep a current list of companies that could potentially employ you, and *definitely* keep tabs on your friends who may work there – you never know when you're going to need to call in that favor (or vice versa). If you don't have friends at other companies, make some! Take advantage of the Internet (and the LightWave newsgroups and mailing lists).

Now - what do you do if you're reading this the day *after* the cruel club of fate has bludgeoned you senseless? First of all, I repeat: DON'T PANIC. Animators who have worked in a professional environment for any length of time never go jobless for very long. I have yet to see any of them standing by the side of the freeway with a sign that reads "will animate for food." Chances are, unless the company goes under or you crashed the boss's car, the place that laid you off will eventually find work and offer you a new job. However, unless you can afford to live the good life and not collect a paycheck for a while (i.e. mom and dad are rich), you really need to assume you're not getting hired back anytime soon and start looking for work. Send out your demo reel (you should have copies available in advance), check the websites of the companies on your list for opportunities and call your friends around town who may have connections. If worse comes to worst and it takes longer than you thought to land a new job, you can always stay on someone's couch for a while (that's what I did when I got laid off and it wound up being the best thing that could have happened to me!).

Don't despair. Your new opportunity may very well be something you enjoy even more. Who knows? Being "forced" to find a new job could lead you to shout out the title of a column I wrote many years ago, "I'm Glad I Got Fired!"

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